Subliminal Exposure to Empathy Primes: A New Method to Reduce Intergroup Bias?

by

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Abstract

An abundant literature has demonstrated the benefits of empathy for intergroup relations (e.g., Batson, Chang, Orr, & Rowland, 2002). In addition, empathy has been identified as the mechanism by which various successful prejudice-reduction procedures impact attitudes and behaviour (e.g., Costello & Hodson, 2010). However, standard explicit techniques used in empathy-prejudice research have a number of potential limitations (e.g., resistance; McGregor, 1993). The present project explored an alternative technique, subliminally priming (i.e., outside of awareness) empathy-relevant terms (Study 1), or empathy itself (Study 2).

Study 1 compared the effects of exposure to subliminal empathy-relevant primes (e.g., compassion) versus no priming and priming the opposite of empathy (e.g., indifference) on prejudice (i.e., negative attitudes), discrimination (i.e., resource allocation), and helping behaviour (i.e., willingness to empower, directly assist, or expect group change) towards immigrants. Relative to priming the opposite of empathy, participants exposed to primes of empathy-relevant constructs expressed less prejudice and were more willingness to empower immigrants. In addition, the effects were not moderated by individual differences in prejudice-relevant variables (i.e., Disgust Sensitivity, Intergroup Disgust-Sensitivity, Intergroup Anxiety, Social Dominance Orientation, Right-wing Authoritarianism).

Study 2 considered a different target category (i.e., Blacks) and attempted to strengthen the effects found by comparing the impact of subliminal empathy primes (relative to no prime or subliminal primes of empathy paired with Blacks) on explicit

prejudice towards marginalized groups and Blacks, willingness to help marginalized groups and Blacks, as well as implicit prejudice towards Blacks. In addition, Study 2 considered potential mechanisms for the predicted effects; specifically, general empathy, affective empathy towards Blacks, cognitive empathy towards Blacks, positive mood, and negative mood.

Unfortunately, using subliminal empathy primes "backfired", such that exposure to subliminal empathy primes (relative to no prime) heightened prejudice towards marginalized groups and Blacks, and led to stronger expectations that marginalized groups and Blacks improve their own situation. However, exposure to subliminal primes pairing empathy with Blacks (relative to subliminal empathy primes alone) resulted in less prejudice towards marginalized groups and more willingness to directly assist Blacks, as expected. Interestingly, exposure to subliminal primes of empathy paired with Blacks (*vs.* empathy alone) resulted in more pro-White bias on the implicit prejudice measure. Study 2 did not find that the potential mediators measured explained the effects found.

Overall, the results of the present project do not provide strong support for the use of subliminal empathy primes for improving intergroup relations. In fact, the results of Study 2 suggest that the use of subliminal empathy primes may even backfire. The implications for intergroup research on empathy and priming procedures generally are discussed.

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Overview

The present project considered a novel approach to reducing intergroup bias through empathy: subliminal priming. Study 1 examined the effects of exposure to empathy-relevant primes (*vs.* no prime or primes relevant to the opposite of empathy) on negative attitudes towards immigrants (i.e., prejudice), willingness to help immigrants (i.e., helping behaviour), and willingness to distribute financial aid to immigrants (i.e., discrimination). Study 1 also considered the potential moderating role of several prejudice-relevant individual difference variables. Study 2 considered the effects of exposure to empathy primes (*vs.* no prime or empathy primes paired with Black primes) on generalized prejudice (i.e., prejudice towards several marginalized groups), prejudice towards Blacks, implicit prejudice towards Blacks, willingness to help marginalized groups, and willingness to help Blacks. In addition, Study 2 considered several potential mediators to explain any potential effects found. Overall, the present project built upon an abundant literature on the benefits of empathy generally, as well as for intergroup relations.

The Impact of Empathy on Reducing Prejudice

Despite the prevalence of egalitarian attitudes in contemporary society, marginalized groups continue to face prejudice and discrimination (Dovidio & Esses, 2001; Wagner, Christ & Pettigrew, 2008). Intergroup researchers have explored various avenues to reduce such prejudices, including information-based programs about cultural diversity, role taking techniques, as well as conflict resolution workshops with opposing

groups (Fisher, 1994; McGregor, 1993). Although the impact of such efforts has been mixed, one key aspect of successful strategies involves empathy (Aronson & Bridgeman, 1979; McGregor, 1993; Stephan & Finlay, 1999). In fact, a lack of empathy has recently been noted as more problematic than economical concerns in the United States; US President Barack Obama has repeatedly emphasized the "empathy deficit", urging individuals to consider the plight of others (Honigsbaum, 2013).

Among researchers, however, there is a lack of consensus regarding the definition of empathy. Broad conceptualizations of empathy include "[considering] others as though they were ourselves" (Wegner, 1980, p. 131). Davis (1983) states that empathy "refers to the reactions of one individual to the observed experiences of another" (p.113), which could be intellectual (i.e., cognitive) or visceral (i.e., emotional). Neumann, Boyle, and Chan (2013) define empathy as "the ability to share, perceive, or imagine the experiences of others… associated with compassion, sympathy, and prosocial behaviour" (p.1). Batson, Polycarpou, and colleagues (1997) define empathy as "an other-oriented emotional response congruent with another's perceived welfare" (p.105), which includes sympathy, compassion, and tenderness. Whereas some empathy research explores the effects of experimentally induced empathy as a transient *state* (e.g., Batson & Ahmed, 2009; Stephan & Finlay, 1999), other research considers the link between more stable *trait* (i.e., dispositional) empathy and attitudes/behaviours (e.g., Davis, 1996; Schimel, Wohl, & Williams, 2006).

Research on empathy as a stable *characteristic* or *disposition* has found many benefits of higher (*vs.* lower) levels of trait empathy, including higher levels of prosocial behaviour (Feshbach, 1989; Litvack-Miller, McDougall, & Romney, 1997), and lower levels of aggression (Feshbach, 1989), antisocial behaviours (Eysenck, 1981), and even prejudice (Bäckström & Björklund , 2007; Pratto et al., 1994). Such effects have been demonstrated for a number of marginalized groups, such as the Indigenous Australian community (Pederson, Beven, Walker, & Griffiths, 2004). However, the majority of empathy research in intergroup relations explores the impact of experimentally induced (cognitive or affective) *state* empathy (Batson & Ahmed, 2009; Batson, Polycarpou et al., 1997; Duan & Hill, 1996; Finlay & Stephan, 2000; Gladstein, 1983; Stephan & Finlay, 1999).

In this vein, Batson and Ahmed (2009) describe four psychological states that have been operationalized as empathy. The first and second states are cognitive; *imagine-self* (i.e., imagining how it would feel to be in another person's situation) and *imagine-other* (i.e., imagining how another person feels in their situation). The third and fourth states are affective: *emotion matching* (i.e., feeling what another person feels) and *empathic concern* (i.e., feeling for another person in need). Similarly, Stephan and Finlay (1999) describe two types of empathy: cognitive (i.e., taking the perspective of a target individual) and emotional, which can take two forms: *parallel* (i.e., experiencing what the target individual is feeling), or reactive (i.e., feeling for the target individual). The present project considers the potential benefits of *state* empathy for intergroup bias. Moreover,

consistent with research that examined empathy as a whole construct (e.g., Davis, 1983; Neumann, Boyle, & Chan, 2013), the present project operationalizes state empathy broadly as *an other-oriented prosocial response to the plight of another*.

Intergroup research has uncovered many benefits of *state* empathy (e.g., reduced bias; Galinsky & Moskowitz, 2000)[1]. Such effects have been demonstrated for a variety of socially stigmatized and disadvantaged groups, such as non-heterosexuals (Batson, Polycarpou, et. al., 1997), victims of rape (Pinzone-Glover, Gidycz, & Jacobs, 1998), and the elderly (Pacala, Boult, Bland, & O'Brien, 1995). In fact, empathy also improves relations between groups with a history of genocide; Paluck (2009) found that presenting positive fictional intergroup relations between two historically opposed groups, the Tutsi and Hutus, increased empathy, trust and cooperation with the Tutsi outgroup among Hutus. The overarching finding in the intergroup literature is that empathy reduces outgroup prejudice.

In order to improve attitudes and behaviours towards marginalized groups, research on the impact of empathy on prejudice has employed various procedures (Batson, Chang, Orr, & Rowland, 2002; Costello & Hodson, 2010; Finlay & Stephan, 2000; Galinsky & Moskowitz, 2000; Hodson, Choma, & Costello, 2009; Lolliot et al., 2013; Stephan & Finlay, 1999). For example, Batson, Polycarpou, et al. (1997) instructed participants to empathize with an individual from a stigmatized group via perspective taking techniques. This improved attitudes towards both the target individual as well as

[1] Hereafter, the term *empathy* will be used to refer to state empathy. The distinction between trait and state empathy will no longer be made because the focus and interest of this project is the impact of state empathy.

the outgroup as a whole. This finding has been replicated, confirming that improved attitudes elicited by empathy for a particular individual consistently generalizes to their outgroup (see Dovidio et al., 2004; Lolliot et al., 2013). Thus, simply *asking* individuals to be empathic towards the emotional experience or perspective of an outgroup member not only improves attitudes and increases empathy towards that particular person, but the attitude shift can also *generalize* to their outgroup as well.

Similarly, Finlay and Stephan (2000) had White participants either read one of several everyday discriminatory experiences for the outgroup, an African American (i.e., Black) student at a metropolitan college in the United States, or an everyday scenario of discrimination against a member of their ingroup, an Anglo American (i.e., White) student at a university in Hong Kong. Prior to reading the stories, participants were either instructed to empathize with the author of the story or to focus on the writing (i.e., as a control). All participants evaluated both African Americans and Anglo Americans afterwards. Overall, negative emotions (e.g., anger, annoyance) towards the ingroup were reported more strongly after reading about discrimination against a Black student, relative to reading about discrimination against a White student. Moreover, participants given empathy (*vs.* objective) instructions reported less negative affect towards African Americans. Of all of the conditions, participants who were instructed to remain objective (*vs.* empathize) in the story *and* read about their ingroup (*vs.* outgroup) experiencing discrimination expressed the most negative attitudes towards African (*vs.* Anglo) Americans. However, ratings of African and Anglo Americans did not significantly differ

(i.e., both groups were rated similarly) when participants were instructed to empathize *or* they read about the African American student. That is, instructions to empathize (*vs.* be objective) with an outgroup member improved attitudes towards their outgroup as a whole. Overall, the various procedures used for instructing participants to empathize find similar attitudinal improvements from outgroup members to outgroups as a whole, established across different types of marginalized outgroups.

In addition to improving attitudes, empathy also affects helping behaviour. Batson, Chang, Orr, and Rowland (2002) found that inducing empathy towards a drug addict lead to more positive attitudes towards the target individual (i.e., outgroup member), generalized to more positive feelings about drug addicts (i.e., the outgroup), and lead to helping behaviour towards other drug addicts (i.e., other outgroup members). Participants listened to an audiotape of a real or fictitious (varied by condition) heroin addict. They were either instructed to take an objective and detached perspective (i.e., low empathy instructions), or to take the perspective of the drug addict and think about how he was affected (i.e., high empathy instructions). Participants in the high (*vs*. low) empathy conditions reported significantly more empathy towards the "real" drug addict. A similar but weaker effect was found towards the fictional addict. Participants in the high (*vs.* low) empathy conditions allocated more resources to a local funding agency providing aid to drug addicts, despite being aware that the money would aid other drug addicts (i.e., not the target individual they listened to).

Thus, perspective taking tasks targeted at an outgroup not only improve attitudes towards the whole group but also extend the behavioural benefits to individual members of that outgroup (Batson et al., 2002; Shih et al., 2009). Shih and colleagues (2009) found that after completing a perspective taking task regarding Asian Americans (i.e., an outgroup), participants expressed less prejudice and discrimination towards another outgroup member (Asian American job applicant) in an unrelated task. Such research suggests that empathy is a flexible and useful emotion in the prejudice context because it is able to generalize both from the individual to the group as well as the reverse.

Researchers have also demonstrated that the benefits of empathy can last for (at least) short durations. Batson, Polycarpou et al. (1997) found that empathy improved attitudes towards even one of the most socially shunned groups (i.e., convicted murderers), with the effects of the manipulation apparent 1-2 weeks after the study. This study contributed to the empathy-prejudice literature by improving attitudes towards a group that was not surrounded by social norms prescribing equal treatment (i.e., as there are for racial and ethnic outgroups), and demonstrating lasting effects several weeks later. Similarly, Hodson, Choma, and Costello (2009) used a simulation exercise to induce perspective taking of homosexuals (among heterosexuals), finding that the resulting boost in positive attitudes persisted a week after the manipulation. Such research suggests that empathy interventions, both the indirect manipulations (e.g., Hodson, Choma, & Costello, 2009), as well as the ones with explicit instructions to empathize (e.g., Finlay &

Stephan, 2000), are able to exert significant effects on prejudice towards a wide variety of groups and through various techniques.

Empathy as a Mediator of Effects on Outgroup Attitudes

Research on empathy in the intergroup literature typically uses perspective taking procedures to manipulate empathy (e.g., Finlay & Stephan, 2000), assuming that instructions to imagine the perspective of a target individual impacts bias through the experience of empathy. Such research operationalizes empathy as imagining the viewpoint of a target individual, but does not necessarily test for empathy as a mediator (i.e., the reason *why* the perspective taking instructions impact attitudes and/or behaviour).

Vescio, Sechrist, and Paolucci (2003) considered whether empathy was in fact the mechanism through which perspective taking tasks reduced anti-Black prejudice among Whites. Half of the participants were instructed to imagine the emotional experience of an African American interviewee who described his experiences of racial discrimination; the other half were asked to remain objective regarding the same interview. Afterwards, participants indicated their empathy (i.e., felt sympathetic, compassionate, etc.) during the interview. Participants instructed to take the perspective of the African American target individual (*vs.* remain objective) expressed more pro-Black attitudes thereafter, replicating past results. Importantly, scores on the empathy measure mediated the effect of the manipulation on attitudes towards Blacks.

Similar results, using a different perspective-taking manipulation and target group (homosexuals), were demonstrated by Hodson, Choma, et al. (2009). Participants in the control condition were given information regarding prejudice and discrimination faced by homosexuals. In the simulation condition, participants imagined themselves on an alien planet with many of the societal restrictions and hostility that sexual minorities face in society (i.e., the perspective taking manipulation). However, participants were not made aware of the parallel treatment of homosexuals in contemporary Western society until the simulation was complete. The simulation (*vs*. control) lead to greater perspective taking, which increased intergroup inclusivity (a sense of "us") and higher levels of empathy (i.e., measured through participant ratings of six empathy-relevant emotions towards homosexuals; e.g., sympathy, compassion, etc.), both of which were predictive of improved attitudes towards homosexuals. Participants in the experimental condition developed significantly more favourable attitudes, compared to the control condition, even a week after the intervention exercise. Thus, direct (e.g., Vescio et al., 2003) and more covert (e.g., Hodson, Choma, & Costello, 2009) perspective-taking techniques affect prejudice towards various groups (e.g., AIDS victims, homosexuals) through empathy arousal (Lolliot et al., 2013).

Research on alternative prejudice-reduction techniques, such as increasing intergroup contact, also find empathy to be a significant mediator (see Lolliot et al., 2013). For example, Hodson (2008) examined the effects of contact on interracial attitudes among British prison inmates, taking into account their Social Dominance

Orientation (SDO; i.e., their preference for hierarchies and a dominance based society; Sidanius & Pratto, 1999). Analyses revealed that empathy fully mediated the impact of contact (in terms of quantity) on ingroup bias (and partially mediated the impact of the quantity of contact on interracial relations) among inmates high in SDO. Similarly, Costello and Hodson (2010) found that emphasizing similarities between animals and humans improved attitudes towards immigrants. This manipulation was able to impact attitudes even for individuals high in ideologies predictive of prejudice (i.e., SDO). When the similarities of animals to humans were emphasized, participants experienced an increase in empathy and recategorization (i.e., sense of "us"), both of which mediated the effect on prejudice towards immigrants. Pettigrew and Tropp's (2008) meta-analysis examining outgroup knowledge, anxiety and empathy as mediators between increased contact and prejudice reduction found that each significantly impacted the relationship. Interestingly, increased empathy generally demonstrated the strongest effects. Taken together, the literature has indicated that increased empathy has a positive effect on intergroup relations, both in terms of attitudes (i.e., prejudices) and behaviours (i.e., helping behaviour or discrimination).

Potential Limitations of Explicit Empathy-Induction Procedures

Although empathy generally reduces prejudice, there are several potential limitations to the explicit procedures typically used (see Hodson, Choma, et al., 2009; McGregor, 1993; Vorauer & Sasaki, 2009). First, explicitly instructing participants to empathize or take the perspective of an outgroup member can be problematic because

individuals higher in prejudice may not be willing to take the view of a minority group member. As noted by Hodson, Choma, et al. (2009), "Such methods… presumably necessitate willingness and ability to perspective-take, a mindset unlikely among prejudice-prone individuals" (p. 974). Explicit methods may also backfire and have unintended consequences. For example, Vorauer and Sasaki (2009) observed improved attitudes towards an outgroup after participants completed a perspective taking task with an outgroup member. However, attitudes towards the specific outgroup interaction *partner* had worsened because the social context activated metastereotypes in participants, raising concern regarding evaluations from the outgroup member, preventing potential benefits. Notably, this effect was amplified among individuals with highly prejudicial attitudes, such that these individuals expressed more negative attitudes towards their interaction partner. Therefore, explicit perspective taking techniques may "have a dark and ironic side, one that may impair rather than facilitate social bonds" (Galinsky, Ku, & Wang, 2005, p.120).

Although empathy has been engaged to improve intergroup relations, de Waal (2009) argues that by default, empathy is an emotion automatically extended to the ingroup (see also Campbell & de Waal, 2011; Cikara, Bruneau, & Saxe, 2011; Hornstein, 1978; Johnson et al., 2002; Preston & de Waal, 2002). Empathy has been described as an automatic response (*vs.* conscious and effortful; Preston & de Waal, 2002), motivated by "identification with others based on physical similarity, shared experience, and social closeness" (de Waal, 2008, p.287). Johnson and colleagues (2002) found that White

university students expressed an empathic bias and were more lenient in assigning punishment to White (*vs.* Black) defendants. Similarly, Xu, Zuo, Wang, and Han (2011) examined empathic responses to racial ingroups (*vs.* outgroups) by measuring activation of the anterior cingulated cortex (ACC), typically activated both when an individual experiences pain and when other individuals experience pain. Such a response has been interpreted to represent an affective empathic reaction, whereby an individual experiences emotional pain similarly for oneself and others (Campbell & de Waal, 2011). In response to visual presentations of physical pain (needle penetration *vs.* Q-tip applied to face) to a racial ingroup member, racial outgroup member, or racially ambiguous individual, Caucasian and Chinese participants demonstrated an ingroup bias (Xu et al., 2011). Specifically, empathy was greatest towards an ingroup member, and least towards the outgroup member. Such research suggests that empathic reactions favour ingroup (*vs.* outgroup) members.

Such research findings suggest that the empathy-prejudice story may be more complex than initially thought (McGregor, 1993). For example, reading about an outgroup member who is attempting to climb the social ladder but is facing obstacles from society (and/or one's ingroup) may not automatically elicit an empathic response (Cikara, Bruneau, & Saxe, 2011; McGregor, 1993). Participants may fail to recognize empathy as a relevant emotion with regard to an outgroup member. In fact, Cikara and colleagues (2011) suggest that individuals perceive and respond less to the suffering of an outgroup member, relative to an ingroup member, based purely on group membership.

Thus, affective responses to outgroup (*vs.* ingroup) members may be pre-wired to favour ingroup members and potentially difficult to impact.

Just as empathy may be an automatic response favouring the ingroup, negative responses toward outgroups may be automatic (and implicit) as well. Thus, an additional potential limitation of typical procedures is that participants may not realize (or recognize) that they hold negative beliefs regarding minority groups (Dovidio & Gaertner, 1986). Despite explicitly holding positive outgroup attitudes, participants may have influential implicit biases outside of their awareness (Devine, 1989). This may be problematic for methods that require participants to acknowledge their negative attitudes and beliefs, experience dissonance, and progress towards less bias. As noted previously, this may be especially difficult for individuals higher in prejudice because they may typically distance themselves from the target group; thus, they may be unable to imagine the perspective of the outgroup member.

Moreover, affect relevant to marginalized groups is often negative in nature (Moreno & Bodenhausen, 2001). Emotions relevant to outgroups have largely been considered in the literature as *integral affect* (Bodenhausen, 1993), emotions elicited *by* an individual/group, and/or social situations associated with that group. In contrast, *incidental affect* represents emotions that are unrelated to the target (Bodenhausen, 1993). Thus, when John is fearful of doctors and thus experiences fear in the doctor's office, he is experiencing *integral affect*. When John feels discomfort in a doctor's office because of the lack of air conditioning, he is experiencing *incidental affect*, which may affect his

interactions with the doctor but do not stem from the target. In intergroup relations, *incidental affect* would represent an emotion derived from a non-intergroup source (i.e., unrelated to an outgroup); for instance, being frightened during a horror movie while coincidentally sitting near an outgroup member. *Integral affect* would refer to an emotional response *to* an outgroup member, due to their outgroup membership; for instance, becoming fearful of a Black man because of violent and aggressive stereotypes regarding his group.

Research demonstrating the automatic ingroup-bias of empathy, and automatic negative affective response to outgroup members, highlights the importance of considering whether empathy-inducing procedures activate *integral* or *incidental affect.* That is, standard procedures may be problematic because they presume positive integral affect will automatically be elicited towards outgroup members (i.e., even though outgroups may not necessarily have positive integral affective associations), or presume integral affect towards outgroups can be affected through explicit techniques. Contrary to standard explicit empathy inducing procedures, it may be more effective to activate empathy incidentally (i.e., unrelated to the outgroup) and consider the effects on attitudes and behaviours towards outgroup members. The present project explores this possibility by examining the effects of *incidental* empathy through an alternative technique.

A Novel Approach: Subliminal Priming

In Study 1, we introduced a new approach to the empathy-bias domain: exposure to subliminal empathy-relevant primes in an effort to generate more prosocial and less

prejudicial responses toward an outgroup. Past research has used subliminal priming to explore a variety of interpersonal phenomena which may prove fruitful for our intergroup question. For instance, DeWall and Bushman (2009) found that priming participants with heat-related words (relative to cold relevant terms or neutral words) in a sentence completion task increased aggression and lead to more hostile evaluations of strangers. Other research considered the effects of subliminally priming money on interpersonal behaviours (Vohs, Mead, & Goode, 2008): Participants strongly primed with money (in comparison to those who were mildly primed or not primed) were significantly less helpful to a confederate on various tasks thereafter (e.g., did not help one confederate pick up dropped pencils). Similarly, Araya, Akrami, Ekehammar, and Hedlund (2002) used a sentence completion task to subliminally prime participants (i.e., outside their awareness). In Study 3, those who completed a scale that activated immigrant stereotypes (*vs.* no stereotype activation) and were also subliminally primed with self-control (*vs.* neutral terms) evaluated an unknown person named "Donald" (a stereotypically White name) more positively. There was no impact of the prime in the no stereotype activation conditions. Thus, activating immigrant stereotypes and priming self-regulation (*vs.* neutral terms) reduced negative attitudes towards an unknown White stranger, demonstrating the potential for subliminal primes to impact attitudes. Similarly, Bargh and colleagues (1996, Study 2) explored the impact of subliminally priming participants on behaviour. When participants completed a scrambled sentence task containing stereotypes about the elderly (e.g., old, grey), they walked significantly slower afterwards

(relative to participants who completed a neutral sentence completion task). Together, this research suggests that priming constructs subliminally can impact attitudes and behaviour (although some recent research has reported difficulty replicating such effects; e.g., Doyen, Klein, Pichon, & Cleeremans, 2012; Pashler, Rohrer, & Harris, 2013).

Prejudice research has similarly used priming techniques to explore intergroup relations. Lexical decision tasks represent an alternative subliminal priming technique to sentence completion tasks. Wittenbrink, Judd, and Park (1997) used a Lexical Decision Task to examine the effects of subliminally priming a social category (White, Black, or neutral) on implicit biases. For each trial, a letter string was presented and participants were instructed to indicate whether the letter string was a word or non-word by pressing designated keys. Prior to each trial, participants were exposed to subliminal primes; they were flashed with text for 15 ms (i.e., outside of their awareness). The subliminal prime was either race-related (“Black” or “White”), a neutral word (e.g., “Table”), or a neutral non-word (e.g., “xxxx”). The supraliminal (i.e., visible) stimuli for the Lexical Decision Task were either positive or negative stereotypes for Whites or Blacks, irrelevant attributes, or nonwords. Interestingly, after being primed with the term “White", non-Black participants were significantly faster at recognizing words which were stereotypically positive traits of Anglo Americans (relative to nonwords, words referring to stereotypically negative White traits, or words related to positive or negative Black stereotypes). On the contrary, after being primed with Blacks, participants were significantly faster at identifying words that were stereotypical negative traits for Blacks

(relative to nonwords, words related to positive stereotypes about Blacks, and words related to positive or negative stereotypes about Whites). Thus, priming "Whites" activated positive (but not negative) stereotypes of Whites, whereas priming "Blacks" activated negative (but not positive) stereotypes of Blacks. Therefore, subliminally priming participants with a social category (i.e., Whites or Blacks) activated characteristics associated in line with ingroup-outgroup biases.

Lexical decision tasks have also been used to solely prime (*vs.* prime *and* measure) a construct. Of particular interest to the present investigation, Dijksterhuis, Preston, Wegner, and Aarts (2008) used a Lexical Decision Task to explore the impact of subliminally priming agents on causal attributions for events. Similar to Wittenbrink et al. (1997), participants were instructed to categorize letter strings into words or non-words by pressing designated keys. In this study, the letter strings were either neutral words or non-words. There were 12 practice trials (which had no prime) followed by 72 real trials. Between the task stimuli, prime words were flashed subliminally for (17 ms). The prime was preceded by a *pre-mask* for 250 milliseconds and followed by a *post-mask* for 50 milliseconds. The masks consisted of large X's (e.g., "XXXXXXXX"). The task was programmed to either remove the task stimuli after participants pressed one of the designated keys, or after one of the previously determined times (which ranged from 450-700 milliseconds to mirror individual differences in response times). Following each trial, participants were asked whether stimuli were removed due to their response or whether it was removed by the computer. Participants attributed more responsibility to the self after

being primed with "self"-relevant words (*vs.* neutral Experiment 1) and less responsibility to the self when primed with "computer" (Experiment 2). Interestingly, participants attributed less responsibility to the self when primed with "God" (Experiment 3), *if* they believed in God.

The present project was interested in developing an alternative technique which would evade the various potential issues associated with past explicit empathy procedures (discussed above). Of the subliminal procedures available, the lexical decision task used by Dijksterhuis et al. (2008) was considered most ideal; thus, it was adapted for the present project. Study 1 considered the effects of exposure to subliminal primes of empathy-relevant constructs (relative to no prime or subliminal primes relevant to the opposite of empathy) on attitudes and behaviours for the outgroup of interest.

Study 1

The main purpose of Study 1 was to determine whether subliminally exposing participants to empathy-relevant constructs could impact their attitudes and behaviours towards an outgroup. Research on the relationship between empathy and prejudice has established that empathy, through direct instructions or role-taking tasks, improves attitudes towards numerous outgroups (e.g., Stephan & Finlay, 1999). However, explicit priming procedures have potential drawbacks because they assume participants are willing and/or able to take the perspective or engage in empathy with an outgroup member. Moreover, such tasks may be difficult or resisted by individuals high in prejudicial tendencies.

To circumvent such potential issues, Study 1 adapted a subliminal priming task from Dijksterhuis et al. (2008). Similar to Dijksterhuis et al. (2008), participants in Study 1 were instructed to categorize the letter strings presented on the screen as either words or nonwords by pressing the designated keys. Participants were randomly assigned to one of three conditions: Empathy^{+}, Empathy^{-}, or Control. In the Empathy^{+} and Empathy^{-} conditions, words were flashed between each of the letter strings to prime participants outside of their awareness. In keeping with standard priming practices, the present study used broad, relevant terms to prime the constructs of interest[2]. Specifically, the Empathy^{+} condition flashed words related to being empathic (e.g., warmth) without referring to empathy directly. In the Empathy^{-} condition, primes pertained to being non-empathic (e.g., disregard). In the Control condition, no subliminal stimuli were presented between the letter strings of the task. Overall, it was expected that participants in the Empathy^{+} (relative to those in the Control or Empathy^{-}) conditions would express less outgroup bias.

Extending the Literature

Whereas past empathy research has examined outgroups such as AIDS victims, the elderly, and drug addicts, the present study extended the literature by exploring the ability for empathy to reduce bias towards immigrants. Immigrants comprise about a fifth of the Canadian population, and the percentage of immigrants in North America

[2] This is consistent with both classic and recent priming procedures in the literature (see Bargh et al., 1996, Dijksterhuis et al., 2008), which prime various terms relevant to the construct of interest, but not the construct itself. For example, to prime participants with the "self", Dijksterhuis et al. (2008) used the Dutch words for "I" and "me". Similarly, to prime the elderly, Bargh and colleagues (1996) used words such as "grey".

continues to rise from year to year (Statistics Canada, 2006; 2011; U.S. Census Bureau, 2003). Despite the increasing population of immigrants in the West, immigrants continue to face difficulties due to prejudice and discrimination imposed by majority groups (Esses, Jackson & Armstrong, 1998; Reitz, & Banarjee, 2007). Based on the multitude of research present demonstrating the benefits of empathy on attitudes towards various outgroups (e.g., Finlay & Trafimow, 1998; Pacala, Boult, Bland, & O'Brien, 1995; Pizone-Glover, Gidycz, & Jacobs, 1998), it was expected that priming empathy would similarly improve attitudes towards immigrants.

In addition, Study 1 extended understanding of the effects of empathy by considering the role of various predictors of prejudice. Despite the growing literature on the role of various prejudice-relevant constructs in intergroup relations (Altemeyer; 1998; Bäckström & Björklund, 2007; Duckitt, 2005; Hodson, Hogg, & MacInnis, 2009; Song Hing & Zanna, 2010), most of the literature on the empathy-prejudice relationship, particularly concerning state empathy, has not taken such variables into account. For exploratory purposes, individual differences on the following constructs were considered as potential moderating factors: Disgust Sensitivity, Intergroup-Disgust Sensitivity, Intergroup-Anxiety, Social Dominance Orientation, and Right-wing Authoritarianism.

Disgust Sensitivity is the tendency to experience disgust in everyday life (Olatunji, Haidt, McKay, & David, 2008), and has been linked to negative attitudes towards homosexuals (Inbar, Pizarro, Knobe, & Bloom, 2009), as well as negative attitudes towards abortion, immigration, and marriage equality (Terrizzi, Shook, &

Ventis, 2010). Intergroup Disgust Sensitivity is a related but distinct construct, referring to the tendency to experience disgust when interacting with ethnic outgroups, and is also a strong predictor of negative attitudes towards outgroups (Choma, Hodson, & Costello, 2012; Hodson et al., 2013). Intergroup Anxiety is defined as unease from interacting with outgroup members as well as the fear of discrimination, rejection, and/or disapproval from outgroup members (Stephan & Stephan, 1985). Greenland and Brown (1999) observed a significant, positive association between intergroup anxiety and intergroup bias.

Social Dominance Orientation (SDO) refers to a preference for a hierarchical society, in which one group dominates over others (Pratto et al., 1994), and is negatively related to empathy (Costello & Hodson, 2010, Study 2; Hodson, 2008, Study 2; Pratto et al., 1994; Sidanius et al., 2013). SDO is one of the strongest predictors of prejudice towards a wide variety of outgroups (Altemeyer, 1998), such that individuals high on this construct tend to possess values that support sexism, homophobia, xenophobia, and racism (Pratto et al., 1994). Right-wing authoritarianism is a characteristic that incorporates submission to authority, following traditions (i.e., conventionalism), hostility, and predicts prejudice towards numerous groups (Altemeyer, 1998). Study 1 considered these variables to explore their potential interaction with the empathy manipulation.

In addition to contributing to the literature by considering an understudied outgroup of interest (i.e., immigrants) and considering the role of prejudice-relevant

constructs in the effects (i.e., exploring moderators), Study 1 also extended the literature by priming empathy *incidentally* (rather than integrally). Past research on empathy and intergroup relations typically used explicit techniques to activate empathy by associating it with an outgroup member (e.g., Batson, Polycarpou, et al., 1997). However, this may be problematic due to participants' lack of willingness or ability to empathize with outgroup members. In particular, individuals high in prejudice may be especially resistant to such efforts. Thus, Study 1 used subliminal, incidental empathy-relevant primes. Specifically, the subliminal primes used in Study 1 were relevant to empathy (e.g., compassion) but were not particularly relevant to the outgroup of interest. It was anticipated that priming empathy *incidentally* in the Empathy^{+} condition (relative to the other two conditions) would lead to more positive reactions toward others (even outgroups). By the same rationale, priming the opposite of empathy (i.e., coldness) may worsen outgroup attitudes and helping behaviours. In addition, by priming empathy incidentally (i.e., not in an intergroup manner), it was anticipated that the manipulation would benefit participants, irrespective of their prejudicial tendencies toward the outgroup. We explore these possibilities.

Hypotheses and Predictions

Empathy research typically includes a high empathy and low empathy condition (e.g., Batson, Polycarpou, et al., 1997). Participants in the high empathy condition are often asked to take the perspective of an outgroup member, whereas participants in the low empathy condition are instructed to consider the situation in an unemotional,

objective manner. Similarly, the Empathy^{+} condition in Study 1 exposed participants to empathy-relevant terms, akin to "high empathy" conditions in typical procedures. The Empathy^{-} condition in Study 1 was designed to be conceptually similar to the "low empathy" condition in standard empathy techniques, and likewise generate negative effects on intergroup attitudes (relative to "high empathy" instructions). In addition, Study 1 included a standard neutral Control condition for priming techniques (i.e., one that does not include priming material; Dijksterhuis, et al., 2008). Overall, the purpose of Study 1 was to determine whether exposure to subliminal empathy-relevant primes (*vs.* no prime or primes relevant to the opposite of empathy) impacted intergroup bias towards immigrants.

There were two main goals of Study 1. First, the project considered whether exposure to subliminal, incidental empathy-relevant primes (relative to no prime or subliminal primes of the opposite of empathy) would result in less bias towards immigrants. It was hypothesized that participants in the Empathy^{+} condition (relative to Empathy^{-} or Control) would express less bias and more pro-social behaviours towards immigrants. Specifically, it was predicted that participants exposed to empathy-relevant primes (relative to no prime or primes related to the opposite of empathy) would express significantly less prejudice (i.e., negative attitudes) towards immigrants on the Modern Racism Scale for Immigrants (adapted from McConahay, Hardee, & Batts, 1981), significantly more helping on the Intergroup Helping Orientation measure (adapted from

Costello & Hodson, 2011), and significantly less discrimination on the Resource Allocation Task (adapted from MacInnis & Hodson, 2012).

The second goal of Study 1 was to consider whether the effects of the manipulation would be moderated by individual differences on Disgust Sensitivity, Intergroup Disgust Sensitivity, Intergroup Anxiety, Social Dominance Orientation, and/or Right-wing Authoritarianism. It was hypothesized that the pattern of results described above would hold regardless of individual differences on the prejudice-relevant constructs because the priming manipulation was subliminal and incidental. That is, it did not require participants to recognize the need for empathy, be able to express it, or be willing to actively "participate." Specifically, it was predicted that participants in the Empathy^{+} condition (*vs.* Empathy^{-} and Control) would express less bias towards immigrants regardless of (i.e., not moderated by) individual differences on the prejudice-relevant constructs.

Methods

Participants. A total of 185 students from Brock University's undergraduate research pool participated in the study, for which they received either one credit or five dollars. Fifteen participants were excluded from the analysis because they self-identified as immigrants (because the research examined prejudice towards immigrants), due to participant error (did not follow instructions for study procedure), or for both of these reasons. In addition, because Study 1 and 2 were interested in attitudes toward racial/ethnic minorities in a largely European-Canadian context, participants who self-

identified as non-White (including those who identified as White and another racial/ethnic background) were excluded as well. The final sample was composed of 137 participants: 123 women (89.8%), 14 men (10.2%). The mean age was 19.1 years (*SD* = 2.6) and the majority of participants were between the ages of 18 to 23 years old. Two participants were outliers in terms of age, but did not differ significantly from the rest of the sample on any of the measures (i.e., they were not outliers on any of the measures); thus, they were retained in the analyses.

There were no missing data on the Disgust Sensitivity or Intergroup Disgust Sensitivity measures. There was a single case with missing data (.7%) on each of the following measures: Intergroup-Anxiety, Social Dominance Orientation, and Right-wing Authoritarianism. There were three cases of missing data (2.2%) on the Modern Racism Scale, six cases of missing data (4.4%) on the Resource Allocation Task, and five cases of missing data (3.6%) on each of the Intergroup Helping Orientation subscales. In order to maximize use of the data collected and because there were no multivariate outliers, no measures were taken to adjust for missing data or outliers. Overall, participants were only excluded from mean composition for a measure if they were missing all data on that measure.

Procedure and measures. Upon arrival, participants were seated in private cubicles where they were given basic instructions regarding the study. After signing the informed consent forms (see Appendix A), participants completed five individual difference measures. All five of these measures were filled out on the computer, via

Survey Monkey, in the laboratory. The five measures were Disgust Sensitivity, Intergroup Disgust Sensitivity, Intergroup Anxiety, Social Dominance Orientation and Right-wing Authoritarianism (see below for a detailed discussion of each measure). Next, participants completed a lexical decision task (see below for a detailed description). Participants were randomly assigned to one of three conditions: Empathy^{+}, Control, or Empathy^{-}. After the lexical decision task, participants completed a measure of prejudice (i.e., the Modern Racism Scale for Immigrants), a measure of helping behaviour (i.e., the Intergroup Helping Orientation measure for Immigrants), and a discrimination measure (i.e., the Resource Allocation Task; see below for descriptions of these measures). Lastly, participants completed a demographics questionnaire (see Appendix B), suspicion questions (see Appendix C), and were then given a debriefing form (see Appendix D) explaining the study and providing contact information.

Disgust Sensitivity. The Disgust Sensitivity scale measured participants' general tendency to experience disgust in daily life (Olatunji et al., 2008; see Appendix E). The scale was split into two sets of questions. The first set asked participants the degree to which they agreed or disagreed with 13 statements, indicating responses on a scale from 1 (strongly disagree/very untrue about me) to 4 (strongly agree/very true about me). The statements included items such as, "I might be willing to try eating monkey meat, under some circumstances". The second set of questions asked participants how disgusted they found the experiences described, indicating answers on a scale from 1 (not disgusting at all) to 4 (very disgusting). There were 12 items, such as, "Your friend's pet cat dies and

you have to pick up the dead body with your bare hands." Items 1, 3, and 7 were reverse scored so that higher scores on the mean indicated more Disgust Sensitivity (Cronbach's $\alpha = .84$).

Intergroup Disgust Sensitivity. The Intergroup Disgust Sensitivity scale measured the experience of disgust when interacting with ethnic outgroups (Hodson et al., 2013; see Appendix F). Participants indicated their response from 1 (strongly disagree) to 7 (strongly agree). There were 8 items, such as, "It would not bother me to have an intimate sexual relationship with someone from another racial group." Items 6 and 8 were reverse coded so that higher scores on the mean indicated more Intergroup Disgust Sensitivity (Cronbach's $\alpha = .66$).

Intergroup Anxiety. The Intergroup Anxiety scale measured the degree to which participants' experienced anxiety when interacting with immigrants (adapted from Stephan & Stephan, 1985; see Appendix G). For this scale, participants were asked to indicate the degree to which they would experience 10 emotions (*awkward*, *self-conscious*, *happy*, *accepted*, *confident*, *irritated*, *impatient*, *defensive*, *suspicious*, and *careful*) if they were interacting with immigrants, compared to interacting with their own social group. Participants indicated their responses on a scale from -3 (not at all) to +3 (extremely). Responses were recoded so that scores on the scale ran from 1 (not at all) to 7 (extremely)[3]. Items 3, 4, and 5 were reverse scored so that higher scores on the mean

[3] Responses on this measure were recoded to correspond with the other Individual Difference measures in Study 1 (e.g., Disgust Sensitivity) which ran from 1-4 or 1-7; that is, the means for the other individual difference predictors were all positive numbers. However, the decision to recode was largely arbitrary; importantly, results based on this measure were not impacted by simply adding a constant.

indicated more Intergroup Anxiety (Cronbach's $\alpha = .85$).

Social Dominance Orientation. The Social Dominance Orientation measure examined the endorsement of intergroup hierarchies (Pratto, Sidanius, & Stallwarth, 1999; see Appendix H). Participants indicated their agreement with 16 statements on a scale from 1 (do not agree at all) to 7 (strongly agree), such as, "Some groups of people are just more worthy than others." Items 2, 5, 7, 8, 9, 10, 13, and 15 were reverse coded so that higher scores on the mean reflected higher levels of Social Dominance Orientation (Cronbach's $\alpha = .90$).

Right-wing Authoritarianism. The Right-wing Authoritarianism scale measured participants' tendency to submit to authority and follow conventions (Altemeyer, 1981; 1988; see Appendix I). Participants indicated their answers on a scale from 1 (strongly disagree) to 7 (strongly agree) to 12 items, such as, "Gays and lesbians are just as healthy and moral as anybody else." Items 1, 2, 6, 7, 9, and 11 were reverse coded so that higher scores on the mean indicated greater levels of Right-wing Authoritarianism (Cronbach's $\alpha = .81$).

Lexical Decision Task (i.e., priming manipulation). All participants completed a Lexical Decision Task (adapted from Dijksterhuis et al., 2008; see Appendix J). Participants were randomly assigned to one of three conditions: Empathy^{+}, Control, or Empathy^{-}. Participants were instructed to identify if the stimuli on the screen was a word (e.g., boat) or non-word (e.g., kugns) by pressing the designated keys as quickly and efficiently as possible. The task included 12 practice trials followed by 72 real trials. Half

of each set (practice and real) contained words (e.g., fabric), the other half nonwords (e.g., phlynsed), randomly dispersed between the trials. After reading the instructions, participants saw a word or nonword appear on the screen, which disappeared when they either pressed the "E" or the "I" key to indicate whether the stimulus was a word or non-word. They were not given any feedback for correct or incorrect answers. Once the stimuli disappeared, a string of X's (i.e., a pre-mask) appeared on the screen for 250 ms. In the Empathy^{+} and Empathy^{-} conditions, the pre-mask was followed by a subliminal prime (i.e., a word related to empathy or the opposite of empathy depending on the condition) for 17 ms. In the Control condition, there was a blank screen for 17 ms. Next, there were another string of X's (i.e., post-mask) for 50 ms before the next word or non-word (i.e., task stimuli) appeared.

Past studies using this procedure have found that participants were unaware of the stimuli being primed at such quick speeds (Dijksterhuis et al., 2008). The pre and post-masks (i.e., "XXXXXXXXXXXXX") were positioned in the centre of the screen at the same spot as the stimuli. The masks were identical in length and were larger than the space that any of the subliminal prime words covered. This was done to ensure subliminal terms were hidden between the string of X's. In the Empathy^{+} condition, the prime words flashed on the screen were empathy-relevant words: *sympathy*, *compassion*, *perspective*, *understanding*, *consideration*, *warmth*, *comprehension*, *insight*. The words referred to both cognitive (e.g., understanding) and emotional (e.g., sympathy) components of empathy, without specifying "empathy" itself. In the Empathy^{-} condition the subliminal

primes involved words which mean the opposite of empathy to prime objectivity: *detachment*, *coldness*, *disregard*, *indifference*, *insensitivity*, *disinterest*, *passive*, *unconcern*. The terms used in the Empathy^{+} condition were synonyms for empathy. The words used in the Empathy^{-} condition were antonyms of empathy. Each of these words was presented an equal number of times. As previously mentioned, there were no subliminal words presented in the Control condition.

Modern Racism Scale for Immigrants. All participants completed the Modern Racism Scale (MRS) for Immigrants which measured policy-relevant orientations towards immigrants through a variety of political questions (adapted from McConahay, Hardee, & Batts, 1981; see Appendix K). Participants indicated their responses for 7 questions on a scale of 1 (strongly disagree) to 5 (strongly agree). The measure included statements such as, "Discrimination against immigrants is no longer a problem in Canada." Item 2 on the measure was reverse scored so that higher scores on the mean indicated more negative attitudes (i.e., prejudice) towards immigrants (Cronbach's α = .85).

Intergroup Helping Orientation measure for Immigrants. The Intergroup Helping Orientation (ITG-HO) Measure asked participants about their willingness to help immigrants (Jackson & Esses, 1997; as refined by Costello & Hodson, 2011; see Appendix L). Participants responded to 22 items on a on a scale from -3 (strongly disagree) to +3 (strongly agree). The measure was composed of 3 subscales: Empowerment, Direct Assistance and Group Change. The *Empowerment* subscale

consisted of 6 items such as, "Canadians should help immigrants to help themselves;" it measured participants' willingness to enable immigrants to improve their circumstances. Items 2, 8, 10, 18, 20 and 22 were averaged to create the Empowerment Subscale mean; higher scores indicated more willingness to empower immigrants (Cronbach's $\alpha = .87$). The *Direct Assistance* subscale consists of 8 items such as, "Preferential treatment should be given to immigrants to help them settle in Canada;" it determined whether participants were willing to provide specific types of help, such as in the workplace. Items 1, 4, 7, 9, 12, 13, 16, and 21 were averaged to create the Direct Assistance subscale mean; higher scores indicating more intention to provide direct assistance (item 16 was reverse scored; Cronbach's $\alpha = .86$). The *Group Change* subscale had 8 items such as, "Immigrants simply need to be more motivated to solve any settlement problems," measuring whether participants placed responsibility for change on immigrants themselves. Items 3, 5, 6, 11, 14, 15, 17, and 19 were averaged (and all reverse scored) to create the Group Change Subscale; higher scores indicated less attribution of responsibility for change on immigrants (i.e., a higher orientation to help immigrants; Cronbach's $\alpha = .85$).

Resource Allocation Task. The Resource Allocation Task examined discrimination in the form of financial aid (MacInnis & Hodson, 2012; see Appendix M). Participants were instructed to allocate funding to 5 different student clubs on the Brock University campus. They were instructed to distribute $60,000 between Brock Pride, Brock Outdoors Club, the Brock Immigrant Student Association, United Gamers of Brock, and the Brock University Creative Writers Club. Participants were given brief

descriptions regarding each of the associations. Of interest was the amount allocated to the immigrant society.

Results

Preliminary analyses. All of the measures were within acceptable normality standards (see Table 1 and 2; see Table 3 for inter-correlations). As expected, participants in the Empathy^{+} (*vs*. Control and Empathy^{-}) condition generally expressed less prejudice and discrimination, a finding further explored below.

The main goal of Study 1 was to determine whether exposure to subliminal primes of empathy-relevant constructs (Empathy^{+} condition), relative to no prime (Control) or subliminal primes of constructs that are opposite of empathy (Empathy^{-}), could reduce bias towards immigrants. Dummy coding was used to create 2 vectors comparing the 3 manipulation conditions (Empathy^{+}, Control, and Empathy^{-}; see Table 4). Empathy^{+} was the comparison group (i.e., coded as 0) for both contrasts. For D1, Control was coded as 1; thus, D1 compared Empathy^{+} to Control. For D2, Empathy^{-} was coded as 1; thus, D2 compared Empathy^{+} to Empathy^{-}.

Overview of analyses. Five main simultaneous regressions were conducted, one for each of the following outcome measures: Modern Racism Scale for Immigrants, Intergroup Helping Orientation (ITG-HO) Empowerment Subscale, ITG-HO Direct

Table 1

Descriptive Statistics

		n	*Min*	*Max*	*Mean*	*SD*	*Skewness*	*Kurtosis*
1	Disgust Sensitivity	137	1.20	3.52	2.70	.43	-.54	.19
2	Intergroup Disgust Sensitivity	137	1.00	4.75	2.31	.91	.56	-.26
3	Intergroup Anxiety	136	1.00	5.60	2.86	.98	.25	-.65
4	Social Dominance Orientation	136	1.00	5.38	2.06	.86	1.06	1.05
5	Right-Wing Authoritarianism	136	1.00	5.00	2.97	.90	-.19	.70
6	Modern Racism Scale	134	1.00	4.14	2.24	.77	.03	-.86
7	Empowerment Subscale	132	-2.17	3.00	.80	1.07	-.19	-.15
8	Direct Assistance Subscale	132	-2.88	3.00	-.09	1.06	-.53	.48
9	Group Change Subscale	132	-1.63	3.00	.49	1.04	.50	-.18
10	Resource Allocation Task	131	3.00	25,000.00	11,637.43	6,093.74	-.31	-.21

Note. n = sample size, *Min* = Minimum score, *Maximum* = Maximum score, *SD* = Standard Deviation. Potential Disgust Sensitivity scores ranged from 1 (Strongly Disagree) to 4 (Strongly Agree), Intergroup Disgust ranged from 1 (Not at all) to 7 (Extremely), Intergroup Anxiety, Social Dominance Orientation, and Right-wing Authoritarianism ranged from 1 (Strongly Disagree) to 7 (Strongly Agree), Modern Racism Scale scores ranged from 1 (strongly disagree) to 5 (strongly agree); Intergroup Helping Orientation subscales (Empowerment, Direct Assistance, Group Change) potentially ranged from -3 (strongly disagree to +3 (strongly agree). The RA amount could range from $0-$60,000. 1-5 were measured before the manipulation, 6-10 were measured after the manipulation.

Table 2

Descriptives for Outcome Measures within Experimental Conditions

	Empathy^{+}		Control		Empathy^{-}	
	M	*SD*	*M*	*SD*	*M*	*SD*
Modern Racism Scale	1.98	.71	2.26	.70	2.42	.82
Empowerment Subscale	1.10	.97	.72	1.15	.61	1.04
Direct Assistance Subscale	.22	.87	-.23	1.18	-.23	1.06
Group Change Subscale	.68	.97	.41	1.11	.39	1.03
Resource Allocation	$13, 075.20	$6,445.16	$10,660.81	$5,665.47	$11,314.17	$6,067.89

Note. Potential Modern Racism Scale scores ranged from 1 (strongly disagree) to 5 (strongly agree); Intergroup Helping Orientation subscales (Empowerment, Direct Assistance, Group Change) potentially ranged from -3 (strongly disagree) to +3 (strongly agree). The Resource Allocation amount could range from $0-$60,000. These measures were collected after the manipulation.

Table 3

Correlations between the Individual Difference Scales and the Dependent Measures (Collapsed across Conditions)

		1	2	3	4	5	6	7	8	9
1	Disgust Sensitivity	1.00								
2	Intergroup Disgust Sensitivity	.09	1.00							
3	Intergroup Anxiety	-.03	.44***	1.00						
4	Social Dominance Orientation	-.03	.52***	.35***	1.00					
5	Right-Wing Authoritarianism	.19*	.40***	.26**	.30***	1.00				
6	Modern Racism Scale	.13	.51***	.34***	.50***	.47***	1.00			
7	ITG-HO Empowerment Subscale	-.03	-.32***	-.21*	-.38***	-.28**	-.62***	1.00		
8	ITG-HO Direct Assistance Subscale	.01	-.25**	-.23**	-.33***	-.14	-.55***	.82***	1.00	
9	ITG-HO Group Change Subscale	-.17	-.50***	-.25**	-.45***	-.52***	-.68***	.58***	.51***	1.00
10	Resource Allocation Task	-.08	-.26**	-.19*	-.18*	-.19*	-.35***	.35***	.24**	.35***

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. ITG-HO = Intergroup Helping Orientation Measure. Scales 1-5 were measured before the manipulation, scales 6-10 were measured after.

Table 4

Dummy Coding for Study 1 Contrasts

	D1	D2
Empathy^{+}	**0**	**0**
Control	1	0
Empathy^{-}	0	1

Note. Condition coded as 0 was the focal group for both contrasts. Condition coded as 1 was the group Empathy^{+} was compared to. D1 compared Empathy^{+} to Control. D2 compared Empathy^{+} to Empathy^{-}.

Assistance Subscale, ITG-HO Group Change Subscale, and the Resource Allocation task[4]. In each of these regressions, the outcome measure was regressed on D1 and D2 to contrast the effects on prejudice, helping, and discrimination (see Table 5 for a summary of the Main Analyses).

Table 5

Summary of Main Analyses

	Modern Racism Scale		Intergroup Helping Orientation Measure						Resource Allocation Task	
			Empowerment		Direct Assistance		Group Change			
	B	β	B	β	B	β	B	β	B	β
D1	.28	.17	-.38	-.17	-.45	-.20	-.27	-.13	-2414.39	-.19
D2	.43	.27**	-.49	-.22*	-.45	-.20	-.29	-.14	-1761.03	-.14
R^2	.05		.04		.04		.02		.03	
F	3.77*		2.48		2.51		1.05		1.75	

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. D1 = Empathy$^+$ *vs.* Control (Empathy$^+$ coded as 0 and Control coded as 1), D2 = Empathy$^+$ *vs.* Empathy$^-$ (Empathy$^+$ coded as 0 and Empathy$^-$ coded as 1).

Modern Racism Scale. Prejudice scores were regressed on D1 and D2, F (2,131) = 3.77, p =.026, f^2= .06; overall, there was a significant effect. Standard interpretations of Cohen's f^2 consider .02 a small effect, .15 a medium effect, and .35 a large effect (Cohen, 1988). Unexpectedly, there was not a significant difference in prejudice between

[4] Given the moderate to high correlations between the dependent measures, an exploratory principal axis factor analysis was conducted to consider whether it would be meaningful to combine all the outcome measures into a single variable. A single factor was revealed (Eigenvalue 3.09, explaining 61.76% of the variance). Other factors did not exceed Eigenvalues of 1.00. The Helping Measure subscale means and Resource Allocation task scores were then reversed to keep all variables running in the same direction, and factor scores were generated. The factor score (named *Bias towards Immigrants*) was regressed on D1 (i.e., Empathy$^+$ *vs.* Control) and D2 (i.e., Empathy$^+$ *vs.* Empathy$^-$), F (2,128) = 3.34, p = .039, f^2 = .05. Exposure to empathy-relevant primes and no primes did not differ significantly, t = -1.96, p = .053. However, there was a significant D2 contrast, t = -2.47, p = .015, such that exposure to empathy-relevant primes generated significantly less bias, relative to exposure to priming the opposite of empathy. However, the main emphasis in the text considers these outcome measures as *separate* constructs to be consistent with the field (e.g., Costello & Hodson, 2011; Jackson & Esses, 1997; McConahay et al., 1981; McInnis & Hodson, 2012) and to provide the most information to the reader.

participants in the Empathy^{+} and the Control conditions (i.e., D1 contrast), $t = 1.73$, $p = .086$. However, there was a significant difference in prejudice towards immigrants between participants in the Empathy^{+} and Empathy^{-} condition (i.e., D2), $t = 2.73$, $p = .007$; as expected, participants in the Empathy^{+} (*vs*. Empathy^{-}) condition expressed significantly less prejudice towards immigrants (see Figure 1).

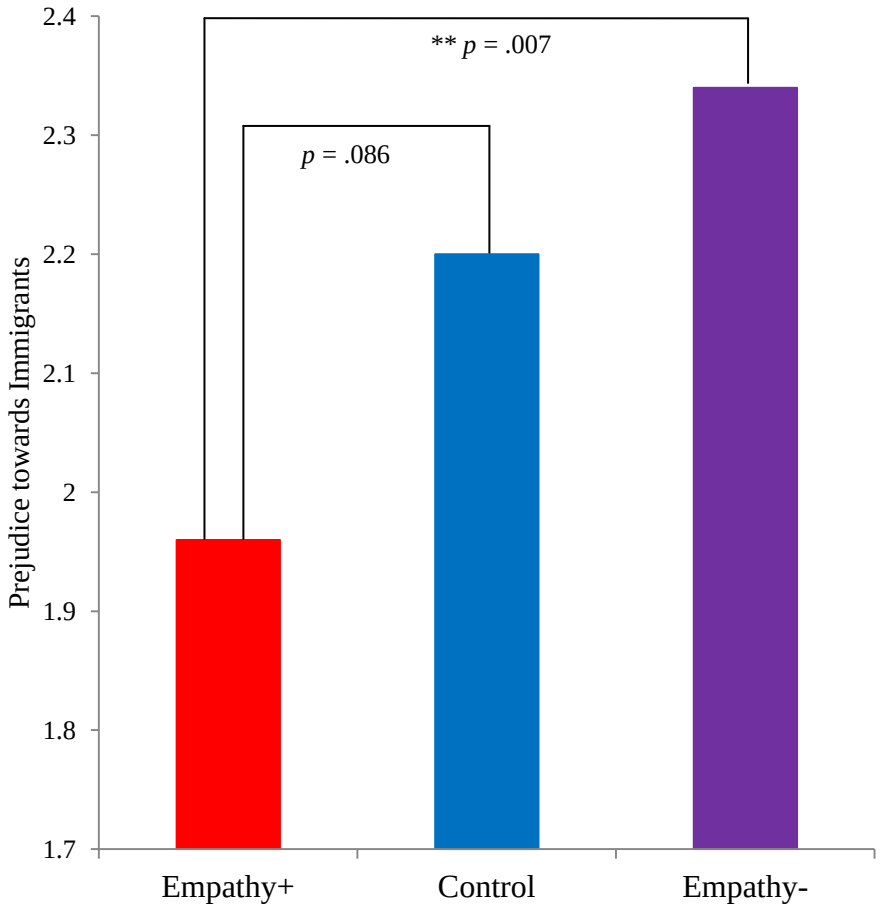

Figure 1. Mean MRS Scores by Priming Condition, Study 1
Note. The MRS scale (i.e., vertical axis) ranges from 1 (Low Prejudice) to 5 (High Prejudice).

Analyses were also conducted to evaluate whether the individual difference measures were moderating the effect of the D1 and D2 contrasts on the MRS. First, an interaction term was created between D1 and Disgust Sensitivity, and D2 and Disgust Sensitivity. Next, the same was done for the other individual difference scales: Intergroup-Disgust Sensitivity, Intergroup- Anxiety, Social Dominance Orientation, and Right-wing Authoritarianism. Thus, there were two interaction terms for each of the mean-centered individual difference scales. A regression was conducted for each of the individual difference measures separately: D1, D2, the centred scale mean, and the interaction terms were entered together. Analyses revealed that the priming effects on MRS were not moderated by these prejudice-relevant individual differences (see Table 6 for a summary of the moderation analyses).

Intergroup Helping Orientation Measures. To examine whether the D1 and D2 contrasts impacted willingness to help immigrants, the three ITG-HO Measure subscales were regressed on D1 and D2. There was no overall effect of the D1 and D2 contrasts on Empowerment scores, F (2, 129) = 2.48, p = .088, f^2=.04. Contrary to predictions, there was not a significant difference in willingness to empower immigrants between participants in the Empathy$^+$ and the Control conditions (i.e., D1), t = -1.65, p = .101. As expected, there was a significant difference between Empathy$^+$ and Empathy$^-$ conditions (i.e., D2), t = -2.15, p =.034, such that participants in the Empathy$^+$ (*vs*. Empathy$^-$) condition indicated significantly more willingness to empower immigrants.

Table 6

Summary of Moderation Analyses

			Intergroup Helping Orientation							
	MRS		EMP		DA		GC		RA	
	B	β	B	β	B	β	B	β	B	β
D1	.28	.17	-.38	-.17	-.45	-.20	-.27	-.12	-2411.15	-.19
D2	.43	.27**	-.49	-.22*	-.46	-.21*	-.29	-.14	-1723.80	-.14
DS	.32	.18	.15	.06	.57	.23	.18	.08	-679.01	-.05
D1 x DS	-.22	-.07	-.55	-.12	-1.04	-.23	-.94	-.22	1431.66	.06
D2 x DS	-.06	-.02	-.09	.02	-.46	-.13	-.63	-.18	-1878.91	-.09
R^2	.07		.05		.06		.06		.04	
F	2.02		1.22		1.67		1.71		1.14	
D1	.20	.12	-.31	-.14	-.40	-.18	-.17	-.08	-2133.17	-.17
D2	.40	.25**	-.45	-.20*	-.43	-.20	-.25	-.12	-1543.99	-.12
ITG-DS	.36	.43**	-.38	-.33*	-.15	-.13	-.41	-.36*	-2115.73	-.32*
D1 x ITG-DS	.08	.05	.01	.00	-.16	-.08	-.26	-.13	1410.49	.12
D2 x ITG-DS	.11	.08	.05	.03	-.21	-.11	-.19	-.10	26.43	.00
R^2	.31		.13		.10		.27		.10	
F	11.54***		3.85**		2.83*		9.18***		2.67*	
D1	.25	.15	-.34	-.15	-.42	-.19	-.23	-.11	-2349.00	-.18
D2	.44	.28**	-.47	-.21*	-.45	-.20*	-.27	.13	-1903.38	-.15
ITG-ANX	.30	.38*	-.32	-.29	-.20	-.19	-.45	-.42*	-336.24	-.05
D1 x ITG-ANX	-.10	-.08	.08	.05	.01	.01	.28	.16	-318.47	-.03
D2 x ITG-ANX	-.00	-.00	.16	.09	-.10	-.06	.22	.13	-1642.50	-.17
R^2	.18		.08		.09		.09		.07	
F	5.40***		2.27		2.44*		2.38*		1.99	
D1	.26	.16	-.33	-.15	-.40	-.18	-.22	-.10	-2297.99	-.18
D2	.47	.30**	-.52	-.23*	-.47	-.21*	-.30	-.14	-1626.95	-.13
SDO	.48	.54***	-.56	-.45**	-.39	-.31	-.40	-.33*	-2412.01	-.34*
D1 x SDO	-.06	-.05	.07	.04	-.11	-.06	-.22	-.12	1211.85	.11
D2 x SDO	.01	.01	.18	.08	.09	.04	-.16	-.07	2061.93	.16
R^2	.32		.19		.15		.22		.07	
F	11.70***		5.68***		4.44**		7.10***		1.86	
D1	.40	.25**	-.53	-.23*	-.53	-.23*	-.46	-.21*	-2745.49	-.21*
D2	.59	.37***	-.64	-.29**	-.52	-.24*	-.56	-.26**	-2542.47	-.20
RWA	.36	.42**	-.49	-.41**	-.26	-.22	-.61	-.52***	-1169.19	-.17
D1 x RWA	.12	.09	.06	.03	.01	.01	-.02	-.01	473.23	.05
D2 x RWA	.13	.08	.27	.12	.16	.07	-.15	-.07	-1869.25	-.15
R^2	.32		.15		.07		.33		.10	
F	12.26***		4.36**		1.92		12.36***		2.65*	

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. DS = Disgust Sensitivity, ITG-DS = Intergroup Disgust Sensitivity, ITG-ANX = Intergroup Anxiety, SDO = Social Dominance Orientation, RWA = Right-wing authoritarianism, MRS = Modern Racism Scale, EMP = Empowerment Subscale, DA = Direct Assistance Subscale, GC = Group Change Subscale, RA = Resource Allocation Task.

There was not an overall impact of the D1 and D2 contrasts on willingness to directly assist immigrants, F (2, 129) = 2.51, p = .086, f^2=.04. Contrary to expectations, there was not a significant difference in willingness to directly assist immigrants between participants in the Empathy$^+$ and the Control condition (i.e., D1), t = -1.94, p = .055, nor between participants in the Empathy$^+$ and Empathy$^-$ conditions (i.e., D2), t = -1.98, p = .050.

There was no overall effect of the D1 and D2 contrasts on Group Change scores (which were reverse scored so that higher scores meant less expectancy of immigrants to improve their circumstances i.e., more helping), F (2, 129) = 1.05, p = .353, f^2 =.02. Contrary to expectations, there were no significant differences in expectancy for immigrants to change their situation between participants in the Empathy$^+$ and the Control condition (i.e., D1), t = -1.21, p = .230, nor between participants in the Empathy$^+$ and Empathy$^-$ conditions (i.e., D2), t = -1.32, p = .189.

As with the Modern Racism Scale, moderation analyses revealed that the effects found were not moderated by individual differences on Disgust Sensitivity, Intergroup Disgust Sensitivity, Intergroup Anxiety, Social Dominance Orientation, nor Right-wing Authoritarianism (see Table 6).

***Resource Allocation Task*.** To determine whether the amount of funds allocated to immigrant students was impacted by the D1 and D2 contrasts, the Resource Allocation for the Immigrant Student Association was regressed on D1 and D2. There was no overall

effect of the D1 and D2 contrasts on the amount of funding allocated to immigrant students, F (2, 128) = 1.75, p = .177, f^2 = .03. Contrary to predictions, there was not a significant difference in the funds allocated to immigrant students between participants in the Empathy$^+$ and Control conditions (i.e., D1), t = -1.81, p =.072, nor between participants in the Empathy$^+$ and Empathy$^-$ conditions (i.e., D2), t = -1.36, p= .177. As with the previous measures, there were no significant moderation effects found (see Table 6).

Discussion

The purpose of Study 1 was to determine whether exposure to subliminal primes of empathy-relevant constructs (relative to no prime or exposure to constructs that are the opposite of empathy) could reduce bias towards immigrants, irrespective of prejudicial tendencies. As expected, participants exposed to subliminal, incidental empathy-related constructs were less prejudicial and more willing to empower immigrants (i.e., a marginalized group), relative to participants flashed with primes related to the opposite of empathy. However, contrary to predictions, there were no significant differences between participants exposed to subliminal empathy-relevant primes (relative to no prime or the opposite of empathy primes) in terms of providing direct assistance, attributing responsibility for group change, or allocating resources to immigrants (see Table 5 for a summary).

Although there was not a significant difference in negative attitudes, helping behaviour, and resource allocation between participants not primed and those exposed to

empathy-relevant primes, the intervention tool was still considered promising. Study 1 included a neutral no-prime "Control" condition, similar to control conditions in standard priming procedures (e.g., Dijksterhuis, et al., 2008). Specifically, priming research typically compares the impact of subliminal primes to no primes. Study 1 also included the Empathy^{-} condition, which was similar to low empathy "control" conditions in standard empathy research (e.g., Batson, Polycarpou, et al., 1997). Specifically, empathy research often compares the impact of "high empathy" to "low empathy" instructions. For instance, Batson, Polycarpou, and colleagues (1997) instructed participants in the "low empathy" condition to be objective and detached when listening to an interview of a woman with AIDS. That is, the "low empathy" condition was used as the comparison or "control" group. Such "low empathy" instructions are commonly used in empathy research as a point of comparison because they are argued to negate the natural tendency for individuals to be empathic (Finlay & Stephan, 2000). That is, if the comparison group in empathy research were not given any instructions, participants may respond empathically. Thus, the comparison group is given instructions to be objective; for instance by asking them to remain detached (Batson, Polycarpou, et al., 1997), or focus on writing style (e.g., Finlay & Stephan, 2000). Therefore, the Empathy^{-} condition in Study 1 is comparable to the "low empathy" or control conditions in standard empathy research. Thus, a significant difference for intergroup bias between participants in the

Empathy^{+} and Empathy^{-} conditions was encouraging, despite there being no significant difference between Control and Empathy^{+}.

Additionally, the effects found were able to circumvent potential issues with prejudice-prone persons (as evidenced by the lack of moderation in Table 6). Such results are promising for intergroup research because they provide a technique that can affect bias across participants, irrespective of their prejudicial tendencies. Explicit empathy interventions that require participants to recognize their biases and undergo a process of change (McGregor, 1993), or perspective taking techniques that expect participants to empathize with outgroup members (e.g., Batson, Polycarpou, et al., 1997), may potentially be difficult or not probable for prejudice-prone individuals. However, subliminal exposure to primes provides a technique through which bias towards marginalized groups may be affected, regardless of prejudicial tendencies. Study 1 provided support for this possibility.

Overall, the potential for using subliminal primes to affect attitudes and behaviours (regardless of personal biases) was confirmed (see Tables 6). However, a post hoc power analysis revealed that Study 1 had very low power (.16) for detecting the effects, at least when all variables are considered simultaneously. The power analysis included 17 terms: 2 dummy vectors (i.e., D1 and D2), 5 potential moderators (i.e., Disgust Sensitivity, Intergroup-Disgust Sensitivity, Intergroup Anxiety, Social Dominance Orientation, Right-wing Authoritarianism), and 10 interaction term between each dummy vector and each potential moderator (i.e., Disgust Sensitivity x D1, Disgust

Sensitivity x D2, Intergroup Disgust Sensitivity x D1, etc.). The low power in Study 1 for detecting the effects may explain the null interaction effects between the prejudice-relevant predictors and the contrast variables. Given that the standard deviations found in Study 1 were similar to those observed in the field (e.g., Choma et al., 2012; Olatunji et al., 2008), low variability is unlikely to be a factor in explaining the lack of significant interaction effects found. Additionally, given the low power of the study, the significant effects found were encouraging for building upon the research.

Limitations. Given that in Study 1, subliminal (i.e., outside of their awareness) and incidental (i.e., not associated or paired with a social group) empathy-relevant (*vs.* opposite of empathy) primes were effective in improving attitudes and behaviours towards immigrants, it is theoretically likely that the impact may be strengthened by *associating* (or pairing) positive empathy primes with a particular social category. Researchers have emphasized the importance of directing empathic arousal towards a social group (Stephan & Finlay, 1999). Thus, subliminally pairing the empathy prime with a social category (i.e., an outgroup) may strengthen the effects. Although this can potentially be problematic with explicit procedures (for the reasons discussed previously), the lexical decision task (as used in Study 1) provides an alternative method to associate a social category with empathy, an emotion typically extended to the ingroup (de Waal, 2009). In addition, Study 2 aimed to strengthen the effects demonstrated in Study 1 by using direct subliminal primes of empathy, by using the words “empathy” and “sympathy” (i.e., rather than priming related constructs). Although this procedure

deviates from some standard priming procedures (e.g., Bargh et al., 1996), Study 2 was interested in examining the effects of empathy directly, and attempted to strengthen the effects by pairing the actual construct (i.e., empathy) with a social category prime.

Whereas Study 1 used subliminal, incidental empathy-relevant primes (i.e., unrelated to a social group or associated contexts), Study 2 also included a condition with integral primes that paired empathy with a social category. It was expected that exposure to subliminal primes of empathy and sympathy while *simultaneously* activating a social category would produce stronger effects for marginalized groups, relative to no prime or priming incidental empathy. To explore such possibilities, and in the spirit of the majority of empathy research using a target category (Batson, Polycarpou, et al., 1997; Finlay & Stephan, 2000), Study 2 incorporated a specific target of prejudice – Blacks.

In Study 1 we used an Empathy^{-} condition, to approximate the type of "control" condition typically used in the empathy-prejudice literature (e.g., Batson, Polycarpou, et al., 1997), discovering that exposure to constructs that are the opposite of empathy produced some undesirable effects (i.e., higher levels of negative attitudes towards immigrants on the Modern Racism Scale, relative to the Empathy^{+} and Control conditions), raising potential ethical concerns about making people less positive toward outgroups, especially if such primes were paired with a specific group. Given our interest in reducing intergroup bias towards marginalized groups, and the ethical considerations regarding subliminal primes of antipathy paired with a marginalized group, the Empathy^{-}

condition was not included in Study 2 to focus on the key (incidental) Empathy^{+} and an additional (integral) Black-Empathy^{+} condition.

Study 2

Study 2 built upon past research through three main goals. First, Study 2 attempted to strengthen the effects found in Study 1. Specifically, in Study 1 exposure to subliminal empathy-relevant primes (relative to subliminal primes related to the opposite of empathy) significantly reduced prejudice towards immigrants and significantly improved willingness to empower immigrants. Study 2 considered whether exposure to subliminal empathy primes (relative to no prime) would similarly reduce intergroup bias (i.e., less implicit and explicit prejudice, more helping). Second, Study 2 considered the potential benefits of pairing subliminal empathy primes with primes of a social category in an additional condition. The third goal of Study 2 was to consider potential mechanisms for the predicted effects (i.e., potential mediators). Additionally, Study 2 extended past literature and the present project by examining prejudice towards racial, religious, gender, and sexual minorities. Specifically, Study 2 was interested in both the effects on target-specific (i.e., Blacks) biases, as well as the implications for bias towards marginalized groups more generally, asking whether any positive effects pertaining to the target group might generalize to other, non-involved groups.

Targets of Prejudice

The main focus of Study 2 was the effect of exposure to subliminal empathy primes (relative to no prime or subliminal empathy primes paired with Black primes) on

attitudes and behaviours towards the target category (i.e., Blacks) as well as towards Muslims, the LGBT (Lesbian, Gay, Bisexual, and Transgendered) community, and women. Race was one of the most common motivations for police-reported hate crimes in Canada in 2009, with Blacks the most racially targeted group that year (Dauvergne & Brennan, 2011). Research finds that racism has persisted across North America as well, with prejudice towards African Americans by Anglo Americans still prevalent (Dovidio, Kawakami, & Gaertner, 2002). Religion and sexual orientation are also major motivators behind hate crimes in Canada (for the year 2009; Dauvergne & Brennan, 2011). In fact, hate crimes against Muslims increased by 38% in 2009 (from the previous year). Hate crimes based on sexual orientation were more often violent compared to all other categories that year as well.

Unfortunately, such patterns and their increasing rates have been consistent over recent years, and across Western regions of the world. Although there have been improvements regarding the moral devaluation of non-heterosexual behaviour and relationships in the United States, large proportions of the American population still hold negative attitudes toward sexual minorities (Herek, 1994). Similarly, Omeish (1999) found that Muslim students in the United States perceived prejudice as a common part of their post-secondary educational institutions, with similar experiences noted in Australia and Argentina (Barkdull et al., 2011). Women also continue to face prejudice, for example, in occupational settings (Christopher & Wojda, 2008). In addition, research

with young women found that (on average) they experienced one to two sexist incidents a week that affected their well-being (Swim, Hyers, Cohen, & Ferguson, 2001).

Such empirical trends demonstrate the need to reduce prejudice and discrimination towards these marginalized groups. Thus, Study 2 examined whether any effects of exposure to subliminal empathy primes (relative to no prime or subliminal empathy paired with Black primes) could influence prejudice and discrimination towards marginalized groups (i.e., women, Muslims, LGBT). Overall, Study 2 built upon past research by exploring the effects of exposure to subliminal, incidental empathy primes (*vs.* no prime and subliminal, integral empathy primes) on racial, religious, gender, and sexual minorities, and considering potential mediators.

Study Objectives

There were three main goals of Study 2. Firstly, we explored whether exposure to subliminal, incidental (i.e., not paired with a social category) empathy primes improved attitudes towards the target category (i.e., Blacks) and other marginalized groups (i.e., women, Muslims, LGBT), relative to not priming participants at all. This contrast considered whether the subliminal, incidental empathy primes (relative to no prime) were successful in reducing intergroup bias, similar to the benefits of subliminal empathy-relevant primes (relative to primes related to the opposite of empathy) in Study 1. Secondly, we examined whether exposure to subliminal, integral (i.e., paired with Blacks) empathy primes significantly improved attitudes and behaviours, relative to subliminal, incidental empathy primes. Thirdly, several mechanisms that may explain the

predicted effects were considered; specifically, general empathy, affective empathy towards Blacks, cognitive empathy towards Blacks, positive mood, and/or negative mood were considered as potential mediators.

At the start of the experiment, participants completed the Lexical Decision Task (i.e., priming manipulation), which consisted of three conditions: Control, Empathy^{+}, and a new condition, Black-Empathy^{+}. The task stimuli (neutral words and non-words), instructions, and supraliminal experience were identical for all three conditions. The Control condition was identical to Study 1; there were no subliminal primes between the letter strings of the task. As in Study 1, the Empathy^{+} condition used incidental empathy primes (i.e., unrelated to a target category), with the terms "empathy" and "sympathy" flashed subliminally between the task stimuli. Thus, the terms used for the subliminal, incidental empathy primes were new (and more direct) in Study 2[5]. The new Black-Empathy^{+} condition was identical to the Empathy^{+} condition of Study 2, except that the subliminal empathy words flashed were paired with terms related to the social category of interest (i.e., "Blacks"). Thus, in the Black-Empathy^{+} condition, the words "empathy" and "sympathy" as well as "Blacks" and "African" were paired and presented subliminally (e.g., "Blacks + sympathy"). This conceptual link represents integral affect (i.e., affect associated with an outgroup).

[5] Rather than priming empathy-relevant constructs, Study 2 primed participants with the construct itself by using the words "empathy" and "sympathy." Although standard priming procedures typically only use terms *relevant* to the phenomenon of interest, Study 2 attempted to isolate the effects of empathy and consider them more directly. Specifically, it was expected that priming the word "empathy" (rather than using words such as compassion, understanding, etc.) would allow the research to isolate the effects of empathy (from related phenomenon) and potentially strengthen the effects as well.

After the Lexical Decision Task, participants completed measures for the five potential mediators: the Personal Distress, Perspective-Taking, and Empathic Concern subscales of the Interpersonal Reactivity Index (IRI; i.e., to measure general empathic arousal; Davis, 1980), the Batson Empathy measure for Blacks (i.e., to measure affective empathy towards Blacks; Batson et al., 1997), the Intergroup Perspective Taking scale (i.e., to measure cognitive empathy towards Blacks; Hodson, Choma, et al., 2009), and the Brief Mood Introspection Scale (i.e., to measure positive and negative mood arousal; Mayer & Gaschke, 1988). Given that the Lexical Decision Task was designed to impact intergroup bias through empathy, the IRI, Batson Empathy measure, and the Intergroup Perspective Taking scale were used to determine whether general empathic arousal or empathy towards Blacks in particular, was affected. Separate measures for general empathic arousal and target-specific empathy were included because exposure to empathy primes (*vs.* empathy paired with Black primes) could impact general empathy, but not empathy towards Blacks, for example. Measures for positive and negative mood arousal were included to address the possibility that the subliminal primes may simply impact arousal. Next, all participants completed attitudinal and behavioural outcome measures: a General Modern Racism Scale (MRS) to examine generalized prejudice (i.e., negative attitudes towards the marginalized groups of interest), an MRS scale tapping negative attitudes (i.e., prejudice) towards Blacks, a General Intergroup Helping Orientation (ITG-HO) Measure (i.e., to examine willingness to help marginalized

groups), as well as an ITG-HO Measure for Blacks (i.e., as a measure of willingness to assist Blacks).

In addition, Study 2 explored the effect of subliminally priming empathy on implicit attitudes. Although Study 1 did not include an implicit dependent measure, it is possible that implicit tasks affect implicit and explicit intergroup biases differently. In fact, past research has found inconsistencies between implicit and explicit measures of prejudice in intergroup research (e.g., Fazio, Jackson, Dunton, & Williams, 1995). Thus, in Study 2, all participants completed the Black-White Implicit Association Test to consider this possibility (IAT; Greenwald, McGree, & Schwartz, 1998). The IAT is a widely-used implicit prejudice measure tapping implicit associations between categories. In the Black-White IAT, implicit prejudice is measured by comparing the speed with which participants pair Black/White faces with positive/negative words. For example, if participants are faster at pairing Black faces with negative words and White faces with positive words (relative to their speed for Black faces with positive words and White faces with negative words), it is taken as an indication of implicit prejudice towards Blacks relative to Whites (Greenwald, Nosek, & Banaji, 2003). Thus, Study 2 built on Study 1 by exploring not only self-reported attitudes, but also considering any impact on implicit prejudices as well.

Hypotheses and Predictions

Corresponding with the three main goals of Study 2, there were three sets of hypotheses and predictions. The first goal of Study 2 was to strengthen the effects found

in Study 1, which demonstrated that exposure to subliminal and incidental empathy-relevant constructs (relative to primes related to the opposite of empathy) reduced prejudice and improved helping. Based on such encouraging results, in Study 2 we anticipated that that exposure to subliminal empathy primes (relative to no prime) would be beneficial. We hypothesized that exposure to subliminal, incidental empathy primes (i.e., Empathy^{+} condition) relative to no prime (i.e., Control) would reduce prejudice and improve helping behaviour towards marginalized groups in Study 2. Specifically, we predicted that participants in the Empathy^{+} (*vs.* Control) condition would express significantly less prejudice on the General MRS and MRS for Blacks, significantly more willingness to help on the General ITG-HO measure and ITG-HO measure for Blacks, and demonstrate significantly less implicit bias towards Blacks on the Black-White IAT.

The second goal of Study 2 was to determine whether exposure to subliminal, integral empathy primes (i.e., Black-Empathy^{+}), relative to subliminal, incidental empathy primes (i.e., Empathy^{+}) would significantly reduce prejudice and improve helping. Specifically, we expected that participants in the Black-Empathy^{+} (*vs.* Empathy^{+}) condition would express significantly less prejudice on the General MRS and MRS for Blacks, significantly more willingness to help on the General ITG-HO measure and ITG-HO measure for Blacks, and demonstrate significantly less implicit bias towards Blacks on the Black-White IAT.

The third goal of Study 2 was to potentially explain *why* these predicted effects might occur. For this purpose five potential mediators were considered: general empathic

arousal, affective empathy towards Blacks, cognitive empathy towards Blacks, positive mood, and negative mood. We hypothesized that exposure to subliminal, incidental empathy primes (*vs.* no prime) would heighten general empathy and target-specific empathy, but not impact positive or negative mood. Thus, it was predicted that participants exposed to subliminal, incidental empathy primes (*vs.* no prime) would express significantly more general empathic arousal, affective empathy towards Blacks, and cognitive empathy towards Blacks. However, no significant effects were expected for positive or negative mood. Similarly, it was hypothesized that exposure to subliminal, integral empathy primes (*vs.* subliminal, incidental empathy primes) would heighten general empathy and target-specific empathy, but not positive or negative mood. Thus, it was expected that exposure to subliminal, integral (*vs.* incidental) empathy primes would result in significantly higher levels of general empathy, affective empathy towards Blacks, and cognitive empathy towards Blacks, but not positive or negative mood. Overall, the predicted effects on prejudice (i.e., General MRS, Black MRS, Black-White IAT) and helping (i.e., General and Black ITG-HO measures) were hypothesized to be mediated by general (i.e., IRI subscales) and target-specific empathy (i.e., Batson Empathy measure and ITG-PT scale), but not positive/negative mood (i.e., BMIS; see Figure 2 for the Predicted Model).

Methods

Participants. Based on a power analysis predicting medium f^2 effects (.15) and requiring high power (.80) for 7 predictors (2 contrast vectors and 5 mediators) a sample

of 103 participants was needed. Specifically, the 7 terms were D1, D2, general empathy, affective empathy for Blacks, cognitive empathy for Blacks, positive mood, and negative mood. The study did not make exclusions over participant recruitment; rather, a demographics questionnaire gathered information about the racial background of the participants. Because both Study 1 and 2 were interested in bias towards racial/ethnic outgroups, the final sample for both studies excluded all participants who self-identified as a racial or ethnic minority (including those who identified as both White and a racial/ethnic minority).

The study recruited 218 participants from Brock University's undergraduate research pool; a total of 47 participants were excluded (based on the criteria mentioned above) leaving a final sample of 171 participants. Participants received course credit or $5 for their time. The final sample contained 136 women (79.5%) and 35 men (20.5%), with a mean age was 19.9 years (*SD* = 3.1). Four participants were outliers in terms of age but were not outliers on any of the measures in the study (i.e., did not significantly differ from the rest of the sample); thus, they were kept in for the analyses. The IAT was missing 4% of its data, which was random and not due to participant factors; thus, it was not problematic and kept in for analyses. All of the other measures were not missing data. As in Study 1, outliers were not excluded from analyses in order to maximize use of the data collected and also because there were no multivariate outliers.

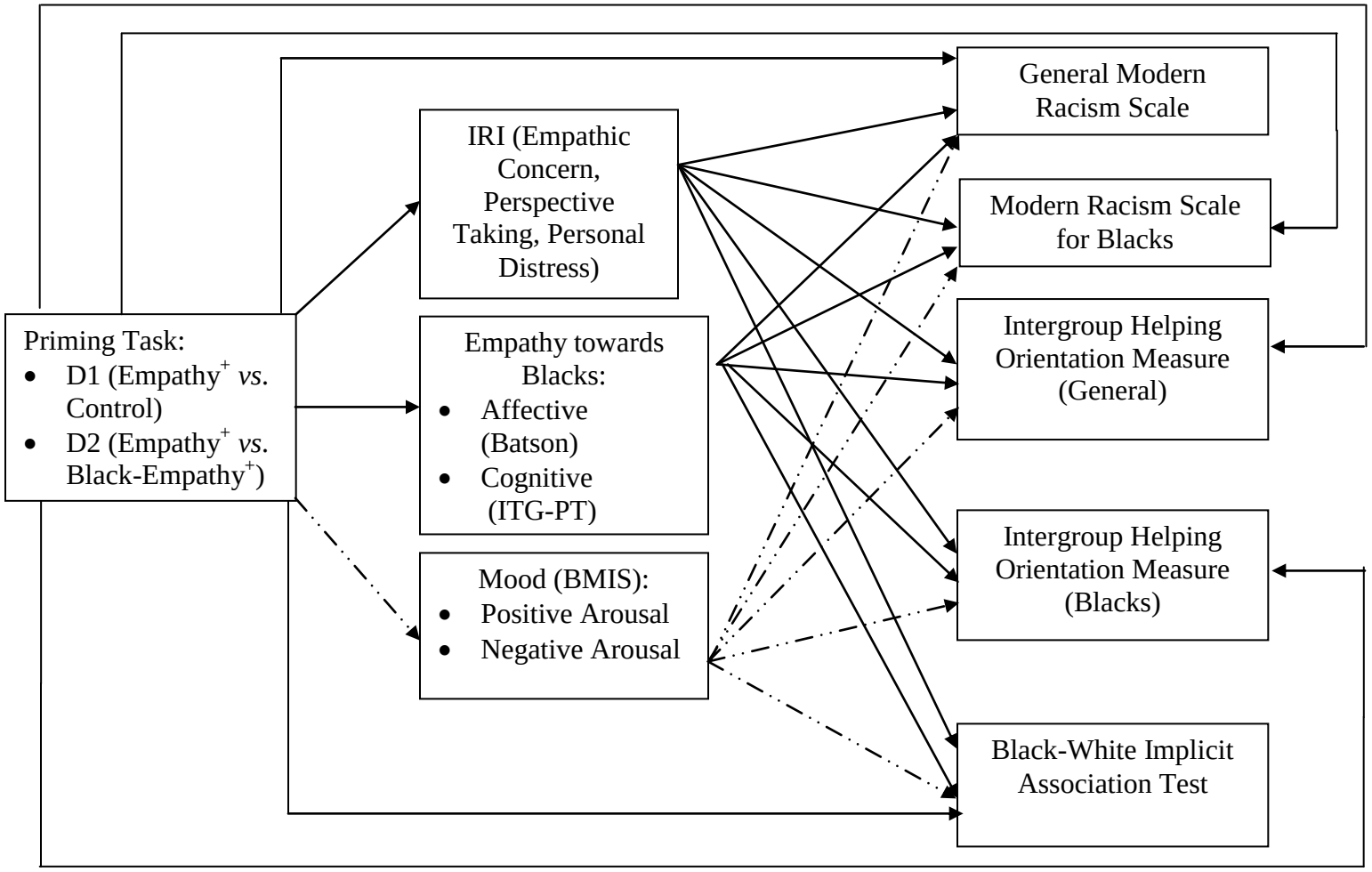

Figure 2. Predicted Model
Note. The straight lines are predicted to be significant. The dotted lines are not expected to be significant.

Procedure and materials. Upon arrival, participants were seated in private cubicles and given basic instructions regarding the study after signing the consent form (see Appendix A). Participants were randomly assigned to the Control, Empathy^{+}, or Black-Empathy^{+} condition (adapted from Dijksterhuis, et al., 2008; see Appendix N). Following the lexical decision task, participants completed the Empathic Concern Subscale, the Personal Distress Subscale, and the Perspective Taking Subscale from the Interpersonal Reactivity Index (adapted from Davis, 1980; see Appendix O), the Batson Empathy scale (Batson, Polycarpou, et al., 1997; see Appendix P), the Intergroup Perspective-Taking Scale (Hodson, Choma, et al., 2009; See Appendix Q), and the Brief Mood Introspection Scale (adapted from Mayer & Gaschke, 1988; see Appendix R). Next, participants completed a General Modern Racism Scale (see Appendix S) measuring prejudice towards several marginalized groups, as well as a Modern Racism Scale for Blacks as a measure of negative attitudes towards Blacks (adapted from McConahay, Hardee, & Batts, 1981; see Appendix T). Participants also completed a General ITG-HO measure for willingness to help marginalized groups (i.e., women, Muslims, LGBT; see Appendix U) and an ITG-HO measure or Blacks (see Appendix V; adapted from Costello & Hodson, 2011).

The order of the MRS scales and the ITG-HO measures were counterbalanced across participants (i.e., half of the participants completed both MRS scales first; the other half completed the ITG-HO measures first). The final measure was the Black-White Implicit Association Test which measured implicit bias (IAT; Greenwald, McGree, & Schwartz, 1998; see Appendix W). Lastly, participants completed a demographics

questionnaire (see Appendix B), as well as suspicion questions (see Appendix C), before being debriefed (see Appendix D).

Lexical Decision Task (i.e., prime manipulation). There were three conditions for this task (adapted from Dijksterhuis et al., 2008; see Appendix N), which began with 12 practice trials, followed by 72 real trials. None of the practice trials contained priming material. As in Study 1, participants categorized letter strings on the screen as words or nonwords as quickly and efficiently as possible. The supraliminal visual experience and instructions were identical to Study 1. The Control condition was identical to Study 1. The Empathy^{+} condition was identical to Study 1 supraliminally (i.e., in terms of what participants saw). However, the subliminal terms were different; the words *empathy* and *sympathy* were used. In the Black-Empathy^{+} condition, the words used to prime Blacks were *Blacks* and *African*. This condition was identical to the Empathy^{+} condition in Study 2, except that the priming stimuli consisted of one of the empathy primes paired with a social category term (e.g., "sympathy + Blacks"; "empathy + African").

Interpersonal Reactivity Index (IRI). This scale measures multiple dimensions of empathy (adapted from Davis, 1980; see Appendix O). Participants completed the Perspective-Taking, Empathic Concern, and Personal Distress subscales to create a composite measure of general empathic arousal. Each subscale contained 7 items, with potential responses ranging from 1 (does not describe me at all) to 5 (describes me very well). The *perspective-taking* subscale measures an individual's ability to take the viewpoint of another person. An example item is, "I try to look at everybody's side of a disagreement before I make a decision." The *personal distress* scale measures the tendency of individuals to experience emotions for another, such as anxiety. An example

item is, "When I see someone who badly needs help in an emergency, I go to pieces." The *empathic concern* subscale measures the tendency to care about the welfare of others in a sympathetic manner. An example item is, "I often have tender, concerned feelings for people less fortunate than me." Together, these subscales assess both the cognitive (perspective taking) and emotional (personal distress and empathic concern) elements of empathy. The subscales were collapsed to create one composite score for the purposes of Study 2; higher mean scores indicated more general empathic arousal (Cronbach's α = .77).

Batson Empathy measure. Participants were asked the extent to which they felt 6 empathy-relevant emotions regarding Blacks as a measure of affective empathy towards the social category (Batson, Polycarpou, et al., 1997; see Appendix P): *sympathetic, compassionate, soft-hearted, warm, tender,* and *moved*. Participants indicated their answers on a scale from 1 (not at all) to 7 (very much). Higher scores on the mean indicated more emotional empathy towards Blacks (Cronbach's α = .91).

Intergroup Perspective Taking measure. As a measure of cognitive empathy towards Blacks, participants indicated their responses to 5 statements on a scale from 1 (strongly disagree) to 7 (strongly agree; adapted from Hodson, Choma, et al., 2009; See Appendix Q). An example item is, "I can mentally 'put myself in the shoes' of a Black person." Higher scores on mean indicated more cognitive empathy towards Blacks (Cronbach's α = .66).

Brief Mood Introspection Scale. The Brief Mood Introspection Scale was completed as a measure of mood arousal (BMIS; adapted from Mayer & Gaschke, 1988; see Appendix R). Participants indicated whether they were experiencing 16 emotions

from 1 (definitely do not feel) to 7 (definitely feel). The list of moods included 8 adjectives related to positive mood (*active, calm, caring, content, happy, lively, loving,* and *peppy*) and 8 adjectives related to negative mood (*drowsy, fed up, gloomy, grouchy, jittery, nervous, sad,* and *tired*). A composite score was created for positive mood by averaging scores for the 8 relevant adjectives (Cronbach's $\alpha = .79$). Scores for the 8 adjectives related to negative mood were averaged to create a composite score (Cronbach's $\alpha = .76$). Higher scores on the positive mood arousal score reflected higher levels of positive mood and higher scores on the negative mood arousal score reflected more negative mood.

Modern Racism Scales (i.e., prejudice). Participants completed a General Modern Racism Scale and an MRS for Blacks (adapted from McConahay, Hardee, & Batts, 1981). The number of items was identical to Study 1, with potential responses ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The Modern Racism Scale typically measures policy-relevant orientations towards a group of interest. For the purposes of Study 2, the General MRS items were adapted to measure prejudice towards marginalized groups (i.e., women, LGBT, Muslims), as an index of generalized prejudice (see Appendix S). The MRS for Blacks was adapted to measure negative attitudes (i.e., prejudice) towards Blacks (see Appendix T). A sample item from the General MRS was, "Discrimination against women is no longer a problem in Canada" (Cronbach's $\alpha = .78$). The MRS adapted for attitudes towards Blacks had items such as, "Over the past few years, Blacks have gotten more economically than they deserve" (Cronbach's $\alpha = .81$). Higher scores on both of the measures indicated more prejudice.

Intergroup Helping Orientation measures. Participants completed two Intergroup Helping Orientation Measures: a General ITG-HO (see Appendix U) measure and an ITG-HO measure for Blacks (adapted from Costello & Hodson, 2011; See Appendix V). The scale and instructions were identical for both of these measures to the ITG-HO Measure in Study 1. There was a total of 22 items, with potential responses ranged from -3 (strongly disagree) to +3 (strongly agree). Responses were recoded so that scores on the scale were from 1 (strongly disagree) to 7 (strongly agree)[6]. The General ITG-HO Measure items were adapted to measure participants' willingness to help marginalized groups (i.e., women, Muslims, and the LGBT community). The measure included items such as, "The LGBT community needs the cooperation of Canadians to compensate for the obstacles imposed upon them." As in Study 1, the General ITG-HO measure was split into three subscales: Empowerment (6 items; Cronbach's $\alpha = .81$), Direct Assistance (8 items; Cronbach's $\alpha = .78$), and Group Change (8 items; Cronbach's $\alpha = .82$; the items in each subscale were the same as outlined in Study 1). The ITG-HO measure for Blacks was adapted to measure participants' willingness to assist Blacks. It included items such as, "Canadians should go out of their way to help Black people". This measure was also analyzed by the three subscales: Empowerment (6 items; Cronbach's $\alpha = .85$), Direct Assistance (8 items; Cronbach's $\alpha = .84$), and Group Change (8 items; Cronbach's $\alpha = .88$). As in Study 1, all of the subscales were coded so that higher scores indicated more willingness to help.

Implicit Association Test. The Implicit Association Test (IAT) was administered through the program Medialab on a computer (Greenwald, McGhee, & Schwartz, 1998;

[6] Responses on this measure were recoded to correspond with other measures in Study 2 using Likert scales, which had positive means (i.e., possible score ranges started above 1). The decision to recode was largely arbitrary; importantly, the findings were not impacted by this change.

Greenwald, Nosek, & Banaji, 2003). This task was a measure of implicit attitudes, measured by reaction times to the pairings of positive and negative terms with Black and White faces over the various blocks. For the purposes of the proposed project, the version being completed by participants was the Black-White IAT, in which participants viewed images of Black and White faces as well as positive and negative words (see Appendix W for all task stimuli and instructions).

There were a total of 6 blocks completed. The first block involved 20 practice trials with a designated key for White faces and another designated key for Black faces. Block 2 was 20 practice trials with a designated key for positive words and another designated key for negative words. Block 3 was 20 practice trials in which participants were instructed to press a designated key for White faces and positive words, and another designated key for Black faces and negative words. Block 4 consisted of 40 real trials with the same instructions as the third block. The fifth block was 20 practice trials in which participants were asked to press a designated key for Black faces and positive words, and another designated key for White faces and negative words. The sixth block was 40 real trials with the same instructions as Block 5. Block 3 and 4 comprised the congruent trials, whereas Blocks 5 and 6 comprised the incongruent trials. Participants received error feedback, such that incorrect responses were followed by a red X in the middle of the screen before the next trial began.

The data from the IAT were analyzed based on the instructions provided by Greenwald, Nosek, and Banaji (2003). Data from Blocks 3 and 4 (i.e., congruent trials), as well as 5 and 6 (i.e., incongruent trials) were used to create a difference score. First, responses with reaction times greater than 10,000 ms were deleted, and participants with

more than 10% of their trials at less than 300 ms were deleted as well. Second, only correct responses were used to compute the mean for each of the Blocks. Next, a pooled standard deviation was calculated (i.e., one for practice trials, and one for the real trials). For each Block, incorrect responses were replaced with the mean for the correct responses of that Block plus 600 ms (as a penalty). Next, a mean for each participant's Block scores was created. Thereafter, a "Practice" variable was created by dividing the difference between the congruent and incongruent practice means by the pooled standard deviation for the practice trials. Similarly, the difference between the real Block means was divided by the pooled standard deviation for real trials to create the "Real" variable. Finally, to calculate the difference score, the sum of each participants Practice and Real score was divided by 2. For the difference scores, a score of 0 would indicate no bias (towards Blacks or Whites), a positive score would indicate a pro-White bias, and a negative score would indicate a pro-Black bias.

Results

Preliminary analyses. All of the measures fulfilled standards of normality (see Table 7 and 8; see Table 9 for inter-correlations). Two dummy code variables were created to contrast the 3 conditions (see Table 10). The condition coded as 0 was Empathy^{+} (as in Study 1). For D1, Control was coded as 1; thus, D1 compared Empathy^{+} with Control (as in Study 1). For D2, Black-Empathy^{+} was coded as 1; thus, D2 compared Empathy^{+} with Black-Empathy^{+}.

Overview of analyses. To address the hypotheses, a set of simultaneous regressions was conducted for each of the 9 dependent measures: the General MRS, the MRS for Blacks, the 3 General ITG-HO measure subscales (Empowerment, Direct

Table 7

Overall Descriptive Statistics

	N	*Min*	*Max*	*Mean*	*SD*	*Skewness*	*Kurtosis*
Interpersonal Reactivity Index	171	1.67	4.43	3.45	.41	-.45	1.33
Batson Empathy Scale (for Blacks)	171	1.50	7.00	4.87	1.19	-.29	-.06
Intergroup Perspective-Taking (for Blacks)	171	1.00	7.00	4.11	1.07	.12	-.162
Brief Mood Introspection Scale (Positive)	171	1.25	6.75	4.37	.94	-.10	.44
Brief Mood Introspection Scale (Negative	171	1.00	6.00	2.85	1.00	.60	.11
General ITG-HO measure: Empowerment Subscale	171	1.00	6.83	4.82	1.09	-.60	.82
General ITG-HO measure: Direct Assistance Subscale	171	1.00	6.63	3.82	1.01	-.14	.41
General ITG-HO measure: Group Change Subscale	171	2.50	7.00	5.15	.99	-.29	-.36
Black ITG-HO measure: Empowerment Subscale	171	1.00	7.00	4.80	1.10	-.47	.66
Black ITG-HO measure: Direct Assistance Subscale	171	1.00	6.75	3.72	1.08	-.10	.29
Black ITG-HO measure: Group Change Subscale	171	1.75	7.00	5.11	1.12	-.51	.15
General Modern Racism Scale	171	1.00	4.71	1.84	.67	1.16	1.89
Modern Racism Scale (for Blacks)	171	1.00	4.57	1.81	.66	1.22	1.65
Black-White Implicit Association Task	164	-.99	1.69	.15	.46	.28	.25

Note. N = sample of participants with data on the measure, Min = Minimum, Max = Maximum, SD = Standard Deviation, Interpersonal Reactivity Index ranges from 1 (Does not describe me well) to 5 (Describes me very well), Batson Empathy measure ranges from 1 (not at all) to 7 (very much), Intergroup Perspective-taking scale ranges from 1 (Strongly Disagree) to 7 (Strongly Agree), Brief Mood Introspection Scale (both positive and negative) range from 1 (Definitely do not feel) to 7 (Definitely feel), both Intergroup Helping Orientation measures range from 1 (Strongly Disagree) to 7 (Strongly Agree), both Modern Racism Scales range from 1 (Strongly Disagree) to 5 (Strongly Agree).

Table 8

Descriptives of Mediators and Outcome Measures within Experimental Conditions

	Control		Empathy^{+}		Black-Empathy^{+}	
	M	*SD*	*M*	*SD*	*M*	*SD*
Interpersonal Reactivity Index	3.46	.37	3.42	.48	3.45	.37
Batson Empathy Scale (for Blacks)	4.74	1.11	4.96	1.20	4.90	1.28
Intergroup Perspective-Taking	4.07	1.17	4.13	1.06	4.11	.97
Brief Mood Introspection Scale (Positive)	4.34	.96	4.54	1.05	4.22	.79
Brief Mood Introspection Scale (Negative	2.80	.95	2.65	1.00	3.11	1.00
General ITG-HO measure: Empowerment Subscale	5.00	.91	4.70	1.26	4.77	1.07
General ITG-HO measure: Direct Assistance Subscale	3.88	.97	3.62	1.03	3.96	1.01
General ITG-HO measure: Group Change Subscale	5.38	.80	4.93	1.07	5.13	1.05
Black ITG-HO measure: Empowerment Subscale	4.93	.96	4.60	1.24	4.88	1.08
Black ITG-HO measure: Direct Assistance Subscale	3.77	1.04	3.50	1.12	3.92	1.04
Black ITG-HO measure: Group Change Subscale	5.32	.89	4.85	1.18	5.17	1.23
General Modern Racism Scale	1.72	.56	2.03	.85	1.75	.51
Modern Racism Scale (Blacks)	1.63	.50	1.98	.82	1.82	.57
Implicit Association Task	.12	.46	.03	.43	.32	.45

Note. M = mean, SD = standard deviation, Interpersonal Reactivity Index ranges from 1 (Does not describe me well) to 5 (Describes me very well), Batson Empathy measure ranges from 1 (not at all) to 7 (very much), Intergroup Perspective-taking scale ranges from 1 (Strongly Disagree) to 7 (Strongly Agree), Brief Mood Introspection Scale (both positive and negative) range from 1 (Definitely do not feel) to 7 (Definitely feel), both Intergroup Helping Orientation measures range from 1 (Strongly Disagree) to 7 (Strongly Agree), both Modern Racism Scales range from 1 (Strongly Disagree) to 5 (Strongly Agree).

Table 9

Correlations between the Measures (Collapsed across Conditions)

		1	2	3	4	5	6	7	8	9	10	11	12	13
1	IRI	1.00												
2	Batson	.39***	1.00											
3	ITG-PT	.23**	.20*	1.00										
4	BMIS+	.12	.09	.28***	1.00									
5	BMIS-	.03	.08	-.18*	-.27***	1.00								
6	ITG-HO Gen EMP	.31***	.35***	.15	.02	-.10	1.00							
7	ITG-HO Gen DA	.32***	.42***	.14	.07	-.00	.73***	1.00						
8	ITG-HO Gen GC	.24**	.24**	.02	-.08	-.14	.48***	.37***	1.00					
9	ITG-HO Bl EMP	.28***	.36***	.08	.03	-.10	.84***	.62***	.48***	1.00				
10	ITG-HO Bl DA	.32***	.39***	.12	.07	-.02	.65***	.85***	.40***	.70***	1.00			
11	ITG-HO Bl GC	.17*	.27***	.05	-.01	-.03	.36***	.34***	.78***	.41***	.41***	1.00		
12	MRS Gen	-.31***	-.23**	-.11	.13	.09	-.65***	-.45***	-.66***	-.55***	-.42***	-.51***	1.00	
13	MRS Blacks	-.18*	-.21**	-.13	.08	.08	-.54***	-.39***	-.61***	-.54***	-.41***	-.64***	.78***	1.00
14	IAT	-.06	.00	.06	.00	.12	.01	-.02	.07	.02	-.01	.14	-.12	-.08

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. IRI = Interpersonal Reactivity Index (General Empathic Arousal), Batson = Batson Empathy Measure for Blacks (Affective Empathy towards Blacks), ITG-PT = Intergroup Perspective Taking (Cognitive Empathy towards Blacks), BMIS+ = Brief Mood Introspective Scale – Positive Mood Arousal, BMIS- = Brief Mood Introspective Scale – Negative Mood Arousal, ITG-HO Gen = Intergroup Helping Orientation (General Helping), ITG-HO Bl = Intergroup Helping Orientation (Blacks), EMP = Empowerment Subscale, DA = Direct Assistance Subscale, GC = Group Change Subscale, IAT = Black-White Implicit Association Test.

Table 10

Study 2 Dummy Coding

	D1	D2
Control	1	0
Empathy^{+}	**0**	**0**
Black-Empathy^{+}	0	1

Note. D1 = Empathy^{+} *vs.* Control, D2 = Empathy^{+} *vs.* Black-Empathy^{+}.

Assistance, Group Change), the 3 ITG-HO measure for Blacks subscales (Empowerment, Direct Assistance, Group Change), and the Black-White IAT. The analyses considered the effects of the contrasts on the dependent measures (i.e., Study Goals 1 and 2) and whether the effects were mediated (i.e., Study Goal 3).

A set of analyses (i.e., 7 regressions) for each of the outcome measures considered whether the effects of the D1 and D2 contrasts were mediated. The technique was adapted from Baron and Kenny's (1986) four step approach to conduct mediation analyses (see Figure 3). First, the outcome variable was regressed on the dummy codes to examine the effect of the D1 and D2 contrasts on the measure (i.e., regression 1). This first analysis tested *path c*, establishing the relationship between the contrast vectors and the outcome variable[7]. Once *path c* had been established, *path a* and *path b* needed to be significant for mediation to be present (although there is debate on the necessity of a significant *c path*; see MacKinnon, Fairchild, & Fritz, 2007).

Next, general empathy (i.e., regression 2), affective empathy for Blacks (i.e., regression 3), cognitive empathy for Blacks (i.e., regression 4), positive mood arousal (i.e., regression 5), and negative mood arousal (i.e., regression 6) were regressed on the contrast vectors to examine the effects of the D1 and D2 contrasts on the potential mediators. These regressions considered the relationships between the contrast vectors and the potential mediators (i.e., tested *path a* between the D1 and D2 contrasts and each of the potential mediators).

[7] There are actually two *c paths*; one from D1 to the outcome variable, and one from D2 to the outcome variable. For brevity, both of these paths are referred to as *path c*. Thus, *path c* refers to the path from the manipulation to the outcome variable (i.e., for D1 as well as for D2). Similarly, there are five *path a* and *path b*'s, but the term is used to refer to the path from the D1 and D2 contrasts to the potential mediators (i.e., in the case of *path a*), and from the potential mediator to the outcome variable (i.e., in the case of *path b*). In addition, *path c'* includes tests of *path b* to consider the unique contribution of each of the mediators (rather than testing each of them separately). Thus, analyses testing *path c'* included tests of whether the potential mediators predict the outcome variable (i.e., *path b*).

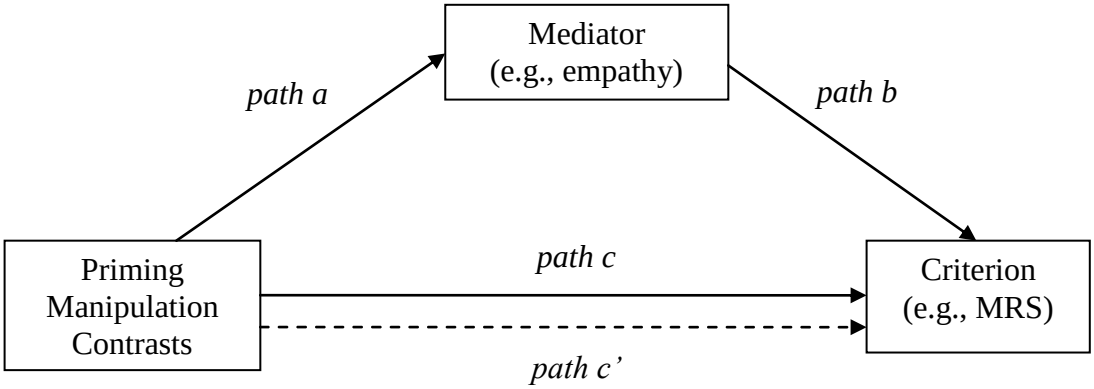

Figure 3. Mediation Model
Note. Dotted path represents a mediated effect (i.e., weakened or non-significant path when mediators are included in the model).

Lastly, the outcome variable was regressed on the contrast vectors and the potential mediators in the regression (i.e., regression 7). The final regression tested whether the effect of the D1 and D2 contrasts on the outcome variable remained significant in the presence of the potential mediators (i.e., *path c'*). This regression included the analysis for whether the potential mediators predicted scores on the dependent measure (i.e., *path b*). The mediators were considered simultaneously to determine which (if any) uniquely predicted scores on the dependent measures (i.e., with the other mediators in the regression).

In order for full mediation to be established, the effect of D1 and/or D2 would need to be non-significant in the final regression and one (or more) of the mediators predicting the outcome measure would also need to be significant. Thus, in this final regression, if *path b* was significant but *path c'* was no longer significant, then full mediation could be concluded. If both *path b* and *c* remained significant (both the contrast variable and the potential mediator significantly predict the dependent measure

scores despite being in the regression together), but the c' path was reduced in magnitude relative to the c path, then partial mediation would be evident[8].

General Modern Racism scale (i.e., generalized prejudice). A set of regressions was conducted to determine whether any effects of the D1 and D2 contrasts on generalized prejudice (i.e., General MRS) were mediated by general empathy, target-specific empathy, or mood arousal (see Table 11). Generalized prejudice was regressed on D1 (Empathy$^+$ *vs*. Control) and D2 (Empathy$^+$ *vs*. Black-Empathy$^+$), F (2, 168) = 3.90, p = .022, f^2 = .05; overall, there was a significant effect of the D1 and D2 contrasts on generalized prejudice. Although there was a significant difference for generalized prejudice between Empathy$^+$ and Control (i.e., D1), t = -.255, p = .012, the incidental empathy primes "backfired", with participants in the Empathy$^+$ (*vs.* Control) condition expressing significantly more generalized prejudice towards marginalized groups (i.e., women, Muslims, LGBT members). This was contrary to the predictions for Study 2, and inconsistent with the findings of Study 1. There was also a significant difference for generalized prejudice between Empathy$^+$ and Black-Empathy$^+$ (i.e., D2), t = -2.23, p = .027; as expected, participants in the Black-Empathy$^+$ (*vs.* Empathy$^+$) condition expressed significantly

[8] Given the moderate to high correlations between most of the outcome measures, a principal axis factor analysis was conducted to consider whether it would be meaningful to combine all of the outcome measures into a single variable. Two factors were revealed; one with an Eigenvalue of 4.93, accounting for 54.79% of the variance, and the second with an Eigenvalue of 1.41, accounting for 15.62% of the variance. However, all outcome measures (except the IAT) demonstrated higher loadings on Factor 1 than 2, and Factor 2 was not meaningful, so a follow-up analysis forced a single factor. The General and Black ITG-HO measure subscales were reverse scored to keep all of the outcome measures running in the same direction. Factor scores were generated, and the variable named *Bias towards Marginalized Groups* was regressed on D1 (i.e., Empathy$^+$ *vs.* Control) and D2 (i.e., Empathy$^+$ *vs.* Black-Empathy$^+$), F (2, 161) = 3.75, p = .026, f^2= .05. There was a significant D1 contrast, t = -2.63, p = .010, such that exposure to empathy primes generated significantly more bias, relative to no prime. However, exposure to empathy primes and empathy paired with Black primes did not differ significantly, t = -1.96, p = .052. The main emphasis considered these outcome measures as *separate* constructs in keeping with the field (Costello & Hodson, 2011; Greenwald et al., 1998; McConahay et al., 1981), and in order to provide the most information to the reader.

Table 11

Mediation Analyses for Generalized Prejudice as Model Criterion

	Generalized prejudice		General Empathy		Empathy towards Blacks				Mood Arousal				Generalized prejudice	
	General MRS		IRI		Affective (Batson)		Cognitive (ITG-PT)		BMIS+		BMIS-		General MRS	
	path c		*path a*		*path a*		*path a*		*path a*		*path a*		*Final equation*	
	B	β	B	β	B	β	B	β	B	β	B	β	B	β
D1	-.31	-.22*	.04	.05	-.22	-.09	-.06	-.03	-.20	-.10	.15	.07	-.31	-.22**
D2	-.28	-.19*	.03	.03	-.06	-.02	-.02	-.01	-.32	-.16	.45	.21*	-.28	-.19*
IRI	-	-	-	-	-	-	-	-	-	-	-	-	-.41	-.25**
Batson	-	-	-	-	-	-	-	-	-	-	-	-	-.09	-.17*
ITG-PT	-	-	-	-	-	-	-	-	-	-	-	-	-.04	-.06
BMIS+	-	-	-	-	-	-	-	-	-	-	-	-	.15	.22**
BMIS-	-	-	-	-	-	-	-	-	-	-	-	-	.12	.18*
R^2	.04		.00		.01		.00		.02		.04		.21	
F	3.90*		.16		.51		.05		1.66		3.09*		6.14***	

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. D1 = Empathy^{+} *vs*. Control (Empathy^{+} coded as 0 and Control coded as 1), D2 = Empathy^{+} *vs*. Black-Empathy^{+} (Empathy^{+} coded as 0 and Black-Empathy^{+} coded as 1), IRI = Interpersonal Reactivity Index (i.e., General Empathic Arousal), Batson = Batson Empathy Measure for Blacks (i.e., Affective Empathy towards Blacks), ITG-PT = Intergroup Perspective-Taking (i.e., Cognitive Empathy towards Blacks), BMIS = Brief Mood Introspection Scale, BMIS+ = Positive Mood Arousal, BMIS- = Negative Mood Arousal, General MRS = General Modern Racism Scale (Generalized Prejudice towards Marginalized Groups). The final equation is the analyses for *path c'*, which also included tests of *path b*.

less generalized prejudice. Therefore, the *c path* (i.e., the effect of the D1 and D2 contrasts on generalized prejudice) was significant.

Next, tests for *path a* (i.e., the effects of D1 and D2 on the potential mediators) were conducted in turn (see Table 11). Each of the potential mediators (i.e., general empathic arousal, affective empathy towards Blacks, cognitive empathy towards Blacks, positive mood arousal, negative mood arousal) was regressed on the two contrast vectors (i.e., D1 and D2) in separate analyses. Significant *a path* findings were a necessary condition to establish that the mediators considered explained the effects (Baron & Kenny, 1986). Analyses for *path b* and *c'* clarified whether that was the case. If *path a* is not significant, the potential mediator is not the reason *why* the D1 and D2 contrasts affected generalized prejudice.

The first potential mediator to be tested was general empathic arousal, measured through the Interpersonal Reactivity Index (i.e., IRI). General empathy was regressed on D1 (Empathy^{+} *vs*. Control) and D2 (Empathy^{+} *vs*. Black-Empathy^{+}), F (2, 168) = .16, p = .852, f^2 = .00. Contrary to predictions, there was not an overall significant effect of the D1 and D2 contrasts on general empathic arousal. Specifically, there was not a significant difference on general empathy between participants in the Empathy^{+} and Control conditions (i.e., D1), t = .55, p = .585, nor between participants in the Empathy^{+} and Black-Empathy^{+} conditions (i.e., D2), t = .39, p = .697. Thus, general empathic arousal did not significantly differ as a function of the contrasts (i.e., *path a* for this potential mediator was not significant). Therefore, the effect of the D1 and D2 contrasts on generalized prejudice was not explained by general empathic arousal.

The second potential mediator to be tested was affective empathy towards Blacks, measured through the Batson Empathy measure. Emotional empathy was regressed on D1 (Empathy^{+} *vs*. Control) and D2 (Empathy^{+} *vs*. Black-Empathy^{+}), F (2, 168) = .51, p = .600, f^2 = .01. Contrary to expectations, there was not an overall significant effect of the D1 and D2 contrasts on affective empathy towards Blacks. Specifically, there was not a significant difference on emotional empathy towards Blacks between participants in the Empathy^{+} and Control conditions (i.e., D1), t = -.98, p = .330, nor between participants in the Empathy^{+} and Black-Empathy^{+} conditions (i.e., D2), t = -.25, p = .803. Thus, the D1 and D2 contrasts did not significantly affect participants' emotional empathy towards Blacks (i.e., *path a* for affective empathy was not significant). Therefore, the effect of the D1 and D2 contrasts on generalized prejudice was not explained by emotional empathy towards Blacks.

The third potential mediator to be tested was cognitive empathy towards Blacks, measured by the Intergroup Perspective-Taking scale. Cognitive empathy towards Blacks was regressed on D1 (Empathy^{+} *vs*. Control) and D2 (Empathy^{+} *vs*. Black-Empathy^{+}), F (2, 168) = .05, p = .948, f^2 = .00. Contrary to predictions, there was not an overall significant effect of the D1 and D2 contrasts on cognitive empathy towards Blacks. Specifically, there was not a significant difference on cognitive empathy towards Blacks between participants in the Empathy^{+} and Control conditions (i.e., D1), t = -.32, p = .751, nor between participants in the Empathy^{+} and Black-Empathy^{+} conditions (i.e., D2), t = -.09, p = .932. Overall, participants did not significantly differ in their cognitive empathy towards Blacks as a function of the contrasts (i.e., *path a* was not significant for cognitive

empathy). Thus, the effects of the D1 and D2 contrasts on generalized prejudice were not explained by cognitive empathy for Blacks.

The fourth potential mediator to be tested was positive mood arousal, which was measured through the Brief Mood Introspection Scale positive mood items (i.e., BMIS+). Positive mood arousal was regressed on D1 (Empathy^{+} *vs*. Control) and D2 (Empathy^{+} *vs*. Black- Empathy^{+}), F (2, 168) = 1.66, p = .194, f^2 = .02. As predicted, there was not an effect of the D1and D2 contrasts on participants' positive mood arousal. Specifically, there was not a significant difference on positive mood arousal between participants in the Empathy^{+} and Control conditions (i.e., D1), t = -1.14, p = .257, nor between participants in the Empathy^{+} and Black-Empathy^{+} conditions (i.e., D2), t = -1.80, p = .074. Overall, participants did not significantly differ on their positive mood as a function of the condition contrasts (i.e., *path a* was not significant for positive mood arousal). Therefore, the effect of the D1 and D2 contrasts on prejudice towards marginalized groups was not explained by positive mood arousal.

The last potential mediator to be tested was negative mood arousal, measured through the negative arousal items on the Brief Mood Introspection Scale (i.e., BMIS-). Negative mood arousal was regressed on D1 (Empathy^{+} *vs*. Control) and D2 (Empathy^{+} *vs*. Black-Empathy^{+}), F (2, 168) = 3.09, p = .048, f^2 = .04. Unexpectedly, there was a significant effect of the D1 and D2 contrasts on negative mood arousal. Although there was not a significant difference on negative mood arousal between participants in the Empathy^{+} and Control conditions (i.e., D1), t = .82, p = .413, there was a significant difference between participants in the Empathy^{+} and Black-Empathy^{+} conditions (i.e., D2), t = 2.45, p = .015. Specifically, participants were significantly more negatively

aroused in the Black-Empathy^{+} (*vs.* Empathy^{+}) condition. Thus, because *path a* was significant for the D2 contrast, it is possible that the effects of the D2 contrasts on generalized prejudice were partially or fully mediated by negative mood, a potential considered in upcoming analyses. However, the effect of the D1 contrast on generalized prejudice was not explained by negative mood.

In the final regression for the tests of mediation, *path c'* was tested (i.e., the *c'-path* with the *b-path* also included in the equation). Generalized prejudice was regressed on D1 (Empathy^{+} *vs*. Control), D2 (Empathy^{+} *vs*. Black-Empathy^{+}), general empathy (i.e., IRI measure), affective empathy for Blacks (i.e., Batson Empathy measure), cognitive empathy for Blacks (i.e., ITG-PT measure), positive mood arousal (i.e., BMIS+), and negative mood arousal (i.e., BMIS-), F (7, 163) = 6.14, $p < .001$, $f^2 = .26$. There was a significant difference in generalized prejudice between participants in the Empathy^{+} and Control conditions (i.e., D1), t = -2.68, p = .008. As in the analyses for *path c*, participants' in the Empathy^{+} (*vs.* Control) condition expressed significantly more generalized prejudice. There was also a significant difference in generalized prejudice between participants in the Empathy^{+} and Black-Empathy^{+} conditions (i.e., D2), t = -2.35, p = .020. As in the analyses for *path c*, participants in the Black-Empathy^{+} (*vs.* Empathy^{+}) condition expressed significantly less prejudice towards marginalized groups. Thus, the effects of the D1 and D2 contrasts were not made non-significant in the presence of the potential mediators, and the magnitudes of their regression coefficients did not differ in the presence of the mediators, indicating no evidence of full or partial mediation. To provide a complete test of the predicted model, the remaining analyses explored the *b-paths* as well.

General empathy significantly predicted generalized prejudice, t = -3.21, p = .002; as predicted, participants lower (*vs.* higher) in general empathy expressed more prejudice towards marginalized groups. Affective empathy towards Blacks also significantly predicted generalized prejudice scores, t = -2.17, p = .031; as expected, participants lower (*vs*. higher) in emotional empathy towards Blacks expressed more generalized prejudice. Contrary to predictions, cognitive empathy towards Blacks did not significantly predict generalized prejudice, t = -.74, p = .461. Interestingly, positive mood arousal significantly predicted generalized prejudice, t = 2.87, p = .005; unexpectedly, participants higher (*vs.* lower) in positive mood expressed more prejudice. Negative mood arousal also significantly predicted prejudice towards marginalized groups, t = 2.44, p = .016; unexpectedly, participants higher (*vs*. lower) in negative mood arousal expressed significantly more negative attitudes towards marginalized groups. Thus, as predicted, *path b* was significant for general empathy and affective empathy towards Blacks. Unexpectedly, *path b* was significant for positive and negative mood arousal as well. Contrary to expectations, *path b* was not significant for cognitive empathy towards Blacks. Overall, the potential mediators tested did not explain the effects of exposure to incidental empathy primes (relative to no prime or integral empathy primes) on prejudice towards marginalized groups.

MRS for Blacks (i.e., prejudice towards Blacks). A set of regressions was conducted to determine whether any effects of the D1 and D2 contrasts on prejudice towards Blacks (i.e., MRS for Blacks) were mediated by general empathy, target-specific empathy, or mood arousal (see Table 12). Prejudice towards Blacks was regressed on D1 (Empathy^{+} *vs*. Control) and D2 (Empathy^{+} *vs*. Black-Empathy^{+}), F (2, 168) = 4.16, p =

Table 12

Mediation Analyses for the Modern Racism Scale for Blacks as Model Criterion

	Prejudice (Blacks)		General Empathy		Empathy towards Blacks				Mood Arousal				Prejudice (Blacks)	
	MRS for Blacks		IRI		Affective (Batson)		Cognitive (ITG-PT)		BMIS+		BMIS-		MRS for Blacks	
	path c		*path a*		*path a*		*path a*		*path a*		*path a*		*Final Equation*	
	B	β	B	β	B	β	B	β	B	β	B	β	B	β
D1	-.35	-.25**	.04	.05	-.22	-.09	-.06	-.03	-.20	-.10	.15	.07	-.36	-.26**
D2	-.16	-.11	.03	.03	-.06	-.02	-.02	-.01	-.32	-.16	.45	.21*	-.17	-.12
IRI	-	-	-	-	-	-	-	-	-	-	-	-	-.15	-.09
Batson	-	-	-	-	-	-	-	-	-	-	-	-	-.11	-.20*
ITG-PT	-	-	-	-	-	-	-	-	-	-	-	-	-.06	-.10
BMIS+	-	-	-	-	-	-	-	-	-	-	-	-	.11	.16*
BMIS-	-	-	-	-	-	-	-	-	-	-	-	-	.09	.14
R^2	.05		.00		.01		.00		.02		.04		.14	
F	4.16*		.16		.51		.05		1.66		3.09*		3.89**	

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. D1 = Empathy^{+} *vs*. Control (Empathy^{+} coded as 0 and Control coded as 1), D2 = Empathy^{+} *vs*. Black-Empathy^{+} (Empathy^{+} coded as 0 and Black-Empathy^{+} coded as 1), IRI = Interpersonal Reactivity Index (General Affective and Cognitive Empathic Arousal), Batson = Affective Empathy towards Blacks, ITG-PT = Intergroup Perspective-Taking (Cognitive Empathy towards Blacks), BMIS = Brief Mood Introspection Scale, BMIS+ = BMIS Positive Mood Arousal, BMIS- = BMIS Negative Mood Arousal, MRS = Modern Racism Scale (Prejudice towards Marginalized Groups). The final equation is the analyses for *path c'*, which also included tests of *path b*.

.017, f^2 = .05; overall, there was a significant effect of the D1 and D2 contrasts on prejudice towards Blacks. There was a significant difference on prejudice towards Blacks between participants in the Empathy$^+$ and Control conditions (i.e., D1), t = -2.88, p = .004. However, the incidental empathy primes "backfired", such that participants in the Empathy$^+$ (*vs.* Control) condition expressed significantly more negative attitudes towards Blacks. This was inconsistent with the findings of Study 1, but consistent with the results for generalized prejudice in Study 2. For both of these measures, priming empathy (relative to no prime) heightened intergroup bias (rather than reduced it, as predicted). There was not a significant difference between Empathy$^+$ and Black-Empathy$^+$ (i.e., D2), t = -1.29, p = .200. Thus, *path c* (i.e., the effect of the D1 and D2 contrasts on the prejudice towards Blacks) was significant for D1, but not for D2.

The analyses (and thus results) for *path a* (i.e., the effect of the D1 and D2 contrasts on the potential mediators) were identical to those described for generalized prejudice, and thus will not be detailed again here or for the following analyses. As previously mentioned, significant *a path* findings were a necessary condition to establish that the mediators explained the effects of the D1 and D2 contrasts on the outcome variable (Baron & Kenny, 1986). *Path a* was not significant for general empathy, affective empathy for Blacks, cognitive empathy for Blacks, or positive mood arousal. Therefore, the effects of the D1 and D2 contrasts on prejudice towards Blacks were not mediated by these variables. *Path a* for negative mood was not significant for the D1 contrast (i.e., Empathy$^+$ *vs.* Control); thus, the effects of D1 on prejudice towards Blacks was not mediated by negative mood either. However, *path a* for the D2 contrast (i.e., Empathy$^+$ *vs.* Black-Empathy$^+$) was significant. If the final regression in the mediation

analyses for prejudice towards Blacks found that *path b* for negative mood arousal (i.e., the relationship between negative mood and prejudice towards Blacks) was significant, and the effect of the D2 contrasts on the outcome variable in the presence of the potential mediators was affected (i.e., *path c'*), then mediation could be concluded for negative mood.

In the final regression, *path c'* was tested. Prejudice towards Blacks was regressed on D1 (Empathy^{+} *vs*. Control), D2 (Empathy^{+} *vs*. Black-Empathy^{+}), general empathy (i.e., IRI measure), affective empathy for Blacks (i.e., Batson Empathy measure), cognitive empathy for Blacks (i.e., ITG-PT measure), positive mood arousal (i.e., BMIS+), and negative mood arousal (i.e., BMIS-), F (7, 163) = 3.89, p = .001, f^2 = .17. There was a significant difference in prejudice towards Blacks between participants in the Empathy^{+} and Control conditions (i.e., D1), t = -3.07, p = .002. There was not a significant difference on prejudice towards Blacks between participants in the Empathy^{+} and Black-Empathy^{+} conditions (i.e., D2), t = -1.38, p = .169. As in the analyses for *path c*, participants' in the Empathy^{+} (*vs.* Control) condition expressed significantly more prejudice towards Blacks, and there was not a significant difference between participants in the Empathy^{+} and Black-Empathy^{+} conditions. Thus, the effect of the D1 and D2 contrasts on prejudice towards Blacks was not impacted by the presence of the potential mediators, and the magnitudes of their regression coefficients did not differ meaningfully in the presence of the mediators, indicating no evidence of full or partial mediation. To provide a complete test of the predicted model, the analyses for *path b* are summarized below.

Contrary to predictions, general empathy, t = -1.12, p = .226, and cognitive empathy towards Blacks, t = -1.27, p = .206, did not significantly predict prejudice towards Blacks. As expected, negative mood arousal did not significantly predict prejudice towards Blacks, t = 1.76, p = .081. Consistent with predictions, affective empathy towards Blacks significantly predicted prejudice towards Blacks, t = -2.45, p = .015, such that participants lower (*vs*. higher) in emotional empathy towards Blacks expressed more prejudice towards this social category. Unexpectedly, positive mood arousal significantly predicted prejudice towards Blacks, t = 1.99, p = .048, such that participants higher (*vs.* lower) in positive mood expressed more prejudice.

Overall, the analyses above revealed none of the mediators had both significant *a* and *b paths*; thus, they did not fulfill the guidelines for mediation set out by Baron and Kenny (1986). *Therefore, the effects of the D1 and D2 contrasts on prejudice towards Blacks were not mediated by general empathic arousal, affective empathy towards Blacks, cognitive empathy towards Blacks, positive mood arousal, or negative mood arousal.*

General ITG-HO measure. The General Intergroup Helping Orientation Measure was analyzed by subscale (i.e., Empowerment, Direct Assistance, and Group Change) in keeping with practices in the field (e.g., Costello & Hodson, 2011), and because consideration of the subscales separately is more informative to intergroup research. Thus, three separate sets of analyses were conducted to determine whether the effects of the D1 and D2 contrasts on helping marginalized groups were mediated by general empathy, target-specific empathy, or positive/negative mood.

Empowerment Subscale. A set of analyses considered whether the effect of the D1 and D2 contrasts on empowering marginalized groups (i.e., *path* c) was mediated (see Table 13). Empowerment for marginalized groups was regressed on D1 (Empathy^{+} *vs*. Control) and D2 (Empathy^{+} *vs*. Black-Empathy^{+}), F (2, 168) = 1.24, p = .292, f^2 = .02; contrary to expectations, there was not a significant effect of the D1 and D2 contrasts on participants' willingness to empower marginalized groups. Furthermore, there was not a significant difference between Empathy^{+} and Control (i.e., D1), t = 1.52, p = .132, nor Empathy^{+} and Black-Empathy^{+} (i.e., D2), t = .36, p = .717. For mediation to be present, a significant *c-path* is required (Baron & Kenny, 1986). Because there was no effect of the D1 and D2 contrasts on empowerment of marginalized groups (i.e., *path c*), there could be no mediation either. However, analyses for the full predicted model were completed and those results are summarized below. The results for *path a* (i.e., the effect of the D1 and D2 contrasts on the potential mediators) were identical to those described for the mediation analyses of generalized prejudice.

In the final regression, *path c'* was tested (i.e., this analysis also included tests of the *b-paths*). Empowerment for marginalized groups was regressed on D1 (Empathy^{+} *vs*. Control), D2 (Empathy^{+} *vs*. Black-Empathy^{+}), general empathy, affective empathy for Blacks, cognitive empathy for Blacks, positive mood arousal, and negative mood arousal, F (7, 163) = 5.76, p < .001, f^2 = .25. Consistent with the *path c* analysis (but contrary to expectations), there was not a significant difference between Empathy^{+} and Control (i.e., D1), t = 1.88, p = .061, nor between Empathy^{+} and Black-Empathy^{+} (i.e., D2), t = .63, p = .533.

Table 13

Mediation Analyses for the Empowerment Subscale of the General ITG-HO Measure as Model Criterion

	Intergroup Helping		General Empathy		Empathy towards Blacks				Mood Arousal				Intergroup Helping	
	Empowerment		IRI		Affective (Batson)		Cognitive (ITG-PT)		BMIS+		BMIS-		Empowerment	
	path c		*path a*		*path a*		*path a*		*path a*		*path a*		*Final Equation*	
	B	β	B	β	B	β	B	β	B	β	B	β	B	β
D1	.31	.13	.04	.05	-.22	-.09	-.06	-.03	-.20	-.10	.15	.07	.35	.15
D2	.07	.03	.03	.03	-.06	-.02	-.02	-.01	-.32	-.16	.45	.21*	.12	.05
IRI	-	-	-	-	-	-	-	-	-	-	-	-	.51	.19*
Batson	-	-	-	-	-	-	-	-	-	-	-	-	.27	.29***
ITG-PT	-	-	-	-	-	-	-	-	-	-	-	-	.05	.05
BMIS+	-	-	-	-	-	-	-	-	-	-	-	-	-.09	-.08
BMIS-	-	-	-	-	-	-	-	-	-	-	-	-	-.16	-.15*
R^2	.02		.00		.01		.00		.02		.04		.20	
F	1.24		.16		.51		.05		1.66		3.09*		5.76***	

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. D1 = Empathy^{+} *vs*. Control (Empathy^{+} coded as 0 and Control coded as 1), D2 = Empathy^{+} *vs*. Black-Empathy^{+} (Empathy^{+} coded as 0 and Black-Empathy^{+} coded as 1), IRI = Interpersonal Reactivity Index (General Affective and Cognitive Empathic Arousal), Batson = Affective Empathy towards Blacks, ITG-PT = Intergroup Perspective-Taking (Cognitive Empathy towards Blacks), BMIS = Brief Mood Introspection Scale, BMIS+ = BMIS Positive Mood Arousal, BMIS- = BMIS Negative Mood Arousal, MRS = Modern Racism Scale (Prejudice towards Marginalized Groups). The final equation is the analyses for *path c'*, which also included tests of *path b*.

As predicted, general empathy significantly positively predicted willingness to empower marginalized groups, $t = 2.47$, $p = .015$; participants higher (*vs.* lower) in general empathic arousal were more willing to empower marginalized groups. As expected, affective empathy toward Blacks also significantly positively predicted willingness to empower marginalized groups, $t = 3.78$, $p < .001$; participants higher (*vs.* lower) in emotional empathy towards Blacks were more willing to empower marginalized groups. Contrary to expectations, cognitive empathy towards Blacks did not significantly predict empowerment scores, $t = .60$, $p = .551$. As expected, positive mood did not significantly predict empowerment scores, $t = -1.03$, $p = .304$. Unexpectedly, negative mood arousal significantly negatively predicted willingness to empower marginalized groups, $t = -1.99$, $p = .048$; participants lower (*vs.* higher) in negative mood were more willing to empower marginalized groups. Thus, *path b* was significant for general empathy and affective empathy towards Blacks, as predicted. Interestingly, *path b* was also significant for negative mood arousal, which was not predicted. Contrary to expectations, *path b* was not significant for cognitive empathy towards Blacks. As expected, *path b* was not significant for positive mood arousal. Overall, no support for mediation was found because the effect of the D1 and D2 contrasts on participants' willingness to empower marginalized groups was not significant (i.e., *path c*). *Therefore, there was no effect of the D1 and D2 contrasts on empowerment of marginalized groups, and thus, no mediation by general empathy, target-specific empathy, or (positive/negative) mood arousal.*

Direct Assistance Subscale. Direct assistance scores were regressed on D1 (Empathy^{+} *vs*. Control) and D2 (Empathy^{+} *vs*. Black-Empathy^{+}), F (2, 168) = 1.72, p =

.183, f^2 = .02 (see Table 14); contrary to expectations, there was not an overall effect of the D1 and D2 contrasts on participants' willingness to directly assist marginalized groups. There was not a significant difference between Empathy$^+$ and Control (i.e., D1), t = 1.36, p = .177, nor Empathy$^+$ and Black-Empathy$^+$ (i.e., D2), t = 1.76, p = .080. Thus, *path c* was not significant. For mediation to be present, a significant *c-path* is required (Baron & Kenny, 1986). Thus, there is no effect or mediation for this subscale. However, to provide a complete summary of the results, all of the analyses for this section are summarized. The results for *path a* (i.e., the effect of the D1 and D2 contrasts on the potential mediators) were identical to those described for generalized prejudice.

In the final regression, *path c'* was tested. Direct assistance scores were regressed on D1 (Empathy$^+$ *vs*. Control), D2 (Empathy$^+$ *vs*. Black-Empathy$^+$), general empathy, affective empathy for Blacks, cognitive empathy for Blacks, positive mood arousal, and negative mood arousal, F (7, 163) = 6.92, $p < .001$, f^2 = .30. Contrary to predictions, there was not a significant difference between Empathy$^+$ and Control (i.e., D1), t = 1.85, p = .066. Interestingly, there was a significant difference between Empathy$^+$ and Black-Empathy$^+$ (i.e., D2), t = 2.12, p = .036, such that participants exposed to empathy and Black primes (*vs.* empathy primes alone) were significantly more willing to provide direct assistance to marginalized groups.

Given that the D2 contrast was not significant in the test of *path c*, but significant in the *path c'* analysis, there appears to be some evidence of suppression. Suppression occurs when a variable (i.e., the *suppressor*) "*increases the predictive validity of another variable… by its inclusion in a regression equation"* (Conger, 1974, p. 36). That is, the *suppressor* accounts for variance that is shared with the independent variable or predictor,

Table 14

Mediational Analyses for the Direct Assistance Subscale of the General ITG-HO Measure as Model Criterion

	Intergroup Helping		General Empathy		Empathy towards Blacks				Mood Arousal				Intergroup Helping	
	Direct Assistance		IRI		Affective (Batson)		Cognitive (ITG-PT)		BMIS+		BMIS-		Direct Assistance	
	path c		*path a*		*path a*		*path a*		*path a*		*path a*		*Final Equation*	
	B	β	B	β	B	β	B	β	B	β	B	β	B	β
D1	.25	.12	.04	.05	-.22	-.09	-.06	-.03	-.20	-.10	.15	.07	.31	.15
D2	.33	.15	.03	.03	-.06	-.02	-.02	-.01	-.32	-.16	.45	.21*	.37	.17*
IRI	-	-	-	-	-	-	-	-	-	-	-	-	.42	.17*
Batson	-	-	-	-	-	-	-	-	-	-	-	-	.30	.36***
ITG-PT	-	-	-	-	-	-	-	-	-	-	-	-	.02	.02
BMIS+	-	-	-	-	-	-	-	-	-	-	-	-	.02	.02
BMIS-	-	-	-	-	-	-	-	-	-	-	-	-	-.06	-.06
R^2	.20		.00		.01		.00		.02		.04		.23	
F	1.72		.16		.51		.05		1.66		3.09*		6.92***	

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. D1 = Empathy^{+} *vs*. Control (Empathy^{+} coded as 0 and Control coded as 1), D2 = Empathy^{+} *vs*. Black-Empathy^{+} (Empathy^{+} coded as 0 and Black-Empathy^{+} coded as 1, IRI = Interpersonal Reactivity Index (General Affective and Cognitive Empathic Arousal), Batson = Affective Empathy towards Blacks, ITG-PT = Intergroup Perspective-Taking (Cognitive Empathy towards Blacks), BMIS = Brief Mood Introspection Scale, BMIS+ = BMIS Positive Mood Arousal, BMIS- = BMIS Negative Mood Arousal, MRS = Modern Racism Scale (Prejudice towards Marginalized Groups). The final equation is the analyses for *path c'*, which also included tests of *path b*.

which is unrelated to scores on the outcome measure (MacKinnon, Krull, & Lockwood, 2000). The independent variable or predictor, suppressor variable, and outcome measure, can be related in a number of ways (Conger, 1974; MacKinnon, et al., 2000; Tzelgov & Henik, 1991). Typically, for suppression to be present, the *suppressor* variable is significantly related to the independent variable or predictor; however, it may or may not be related to or predicting scores on the outcome measure (Cohen, Cohen, West, & Aiken, 2003; MacKinnon et al., 2000; Tzelgov & Henik, 1991).

For direct assistance of marginalized groups, there were only two variables in the final regression, in addition to the D2 contrast, which were significantly accounting for variance in the outcome measure (see Table 14). Specifically, general empathy and affective empathy towards Blacks both significantly predicted willingness to directly assist marginalized groups; that is, higher levels of general empathy and affective empathy towards Blacks significantly predicted more willingness to directly assist marginalized groups. The other potential mediators in the regression did not significantly predict scores on the outcome measure nor were they related to the D2 contrast; thus, these variables do not appear to be suppressing the effect of D2. Although both the D2 contrast and the *suppressor* variables had significant regression coefficients, they were not significantly related to each other. However, in the presence of general empathy and affective empathy towards Blacks, the D2 regression coefficient increased and reached significance. Thus, it appears that the suppressor variables were accounting for some variance in the D2 contrast, unrelated to directly assisting marginalized groups, thereby increasing the regression coefficient. Although there was no evidence of mediation, the *path b* analyses are summarized below to provide a complete test of the predicted model.

As predicted, general empathy significantly positively predicted participants' willingness to directly assist marginalized groups, $t = 2.22$, $p = .028$; participants higher (*vs.* lower) in general empathy were more willing to directly assist marginalized groups. As expected, affective empathy also significantly predicted direct assistance scores, $t = 4.67$, $p < .001$; participants higher (*vs.* lower) in emotional empathy towards Blacks were more willing to directly assist marginalized groups. Contrary to expectations, cognitive empathy did not significantly predict direct assistance scores, $t = .24$, $p = .808$. As expected, positive mood, $t = .27$, $p = .787$, and negative mood, $t = -.74$, $p = .459$, did not significantly predict direct assistance scores. Thus, *path b* was significant for general empathy and affective empathy, as predicted. Unexpectedly, *path b* was not significant for cognitive empathy. As predicted, positive and negative mood arousal did not significantly predict direct assistance scores. *Overall, there was no significant effect of the D1 and D2 contrasts on willingness to directly assist marginalized groups, and thus, there was no effect to be mediated by general empathy, target-specific empathy, positive mood arousal, or negative mood arousal. However, there was some evidence for suppression in the final regression, as discussed above.*

Group Change Subscale. Group change scores[9] were regressed on D1 (Empathy^{+} *vs*. Control) and D2 (Empathy^{+} *vs*. Black-Empathy^{+}), F (2, 168) = 3.20, $p = .043$, $f^2 = .04$; overall, there was a significant effect of the D1 and D2 contrasts on group change scores (see Table 15). There emerge a significant difference between Empathy^{+} and Control (i.e., D1), $t = 2.53$, $p = .012$; however, the incidental empathy primes

[9] The Group Change subscale measures participants' attribution of responsibility on a group to change their own situation (i.e., not help them). Originally, higher scores on this measure indicated less willingness to help (i.e., the group is responsible for changing its own situation). However, to keep the direction of helpfulness on the Intergroup Helping Orientation measure consistent, means on this subscale were reversed. Thus, higher group change scores now indicate more willingness to help marginalized groups.

Table 15

Mediation Analyses for the Group Change Subscale of the General ITG-HO Measure as Model Criterion

	Intergroup Helping		General Empathy		Empathy towards Blacks				Mood Arousal				Intergroup Helping	
	Group Change		IRI		Affective (Batson)		Cognitive (ITG-PT)		BMIS+		BMIS-		Group Change	
	path c		*path a*		*path a*		*path a*		*path a*		*path a*		*Final Equation*	
	B	β	B	β	B	β	B	β	B	β	B	β	B	β
D1	.46	.22*	.04	.05	-.22	-.09	-.06	-.03	-.20	-.10	.15	.07	.48	.23**
D2	.21	.10	.03	.03	-.06	-.02	-.02	-.01	-.32	-.16	.45	.21*	.26	.12
IRI	-	-	-	-	-	-	-	-	-	-	-	-	.43	.18*
Batson	-	-	-	-	-	-	-	-	-	-	-	-	.19	.23**
ITG-PT	-	-	-	-	-	-	-	-	-	-	-	-	-.06	-.07
BMIS+	-	-	-	-	-	-	-	-	-	-	-	-	-.15	-.14
BMIS-	-	-	-	-	-	-	-	-	-	-	-	-	-.23	-.23**
R^2	.04		.00		.01		.00		.02		.04		.18	
F	3.20*		.16		.51		.05		1.66		3.09*		4.99***	

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. D1 = Empathy^{+} *vs*. Control (Empathy^{+} coded as 0 and Control coded as 1), D2 = Empathy^{+} *vs*. Black-Empathy^{+} (Empathy^{+} coded as 0 and Black-Empathy^{+} coded as 1), IRI = Interpersonal Reactivity Index (General Affective and Cognitive Empathic Arousal), Batson = Affective Empathy towards Blacks, ITG-PT = Intergroup Perspective-Taking (Cognitive Empathy towards Blacks), BMIS = Brief Mood Introspection Scale, BMIS+ = BMIS Positive Mood Arousal, BMIS- = BMIS Negative Mood Arousal, MRS = Modern Racism Scale (Prejudice towards Marginalized Groups). The final equation is the analyses for *path c'*, which also included tests of *path b*.

"backfired", such that individuals in the Empathy^{+} (*vs.* Control) condition were significantly less helpful to marginalized groups on this measure. Contrary to predictions, there was not a significant difference between Empathy^{+} *vs*. Black-Empathy^{+} (i.e., D2), $t = 1.11$, $p = .267$. Thus, *path c* was significant for the D1 contrast, but not for the D2 contrast. The results for *path a* (i.e., the effect of the D1 and D2 contrasts on the potential mediators) were identical to those described for generalized prejudice.

In the final regression, *path c'* was tested. Group change scores were regressed on D1 (Empathy^{+} *vs*. Control), D2 (Empathy^{+} *vs*. Black-Empathy^{+}), general empathy, affective empathy for Blacks, cognitive empathy for Blacks, positive mood arousal, and negative mood arousal, $F(7, 163) = 4.99$, $p < .001$, $f^2 = .21$. As in the analysis for *path c*, there was a significant difference between Empathy^{+} and Control (i.e., D1), $t = 2.80$, $p = .006$. As before, there was not a significant difference between Empathy^{+} and Black-Empathy^{+}, $t = 1.45$, $p = .148$. Thus, the effect of the D1 and D2 contrasts on group change scores was not made non-significant in the presence of the mediators, and the magnitudes of their regression coefficients did not differ meaningfully in the presence of the mediators, indicating no evidence of full or partial mediation.

As expected, general empathy significantly positively predicted group change scores, $t = 2.27$, $p = .025$; participants higher (*vs.* lower) in general empathic arousal were more helpful to marginalized groups (i.e., women, Muslims, LGBT) on this measure. Consistent with predictions, affective empathy for Blacks significantly positively predicted group change scores as well, $t = 2.88$, $p = .005$; participants higher (*vs.* lower) in emotional empathy towards Blacks were significantly more helpful towards marginalized groups on this measure. Unexpectedly, cognitive empathy did not

significantly predict group change scores, t = -.86, p = .392. As predicted, positive mood did not significantly predict group change scores either, t = -1.84, p = .068. Unexpectedly, negative mood significantly negatively predicted group change scores, t = -3.00, p = .003; participants lower (*vs.* higher) in negative mood were significantly more helpful to marginalized groups on this measure. Thus, *path b* was significant for general empathy and affective empathy, as predicted. Contrary to expectations, *path b* was not significant for cognitive empathy. As predicted, *path b* was not significant for positive mood, although *path b* was significant for negative mood (contrary to expectations). Overall, no support for mediation was found because the potential mediators did not meet all of the conditions. *Therefore, the effects of the D1 and D2 contrasts on group change scores were not mediated by general empathy, target-specific empathy, or positive or negative mood arousal.*

ITG-HO for Blacks. As with the General ITG-HO measure, the Intergroup Helping Orientation Measure for Blacks was analyzed by subscale (i.e., Empowerment, Direct Assistance, and Group Change). Three separate sets of analyses were conducted to determine whether the effects of the D1 and D2 contrasts on helping Blacks were mediated by general empathy, target-specific empathy, or positive/negative mood.

Empowerment Subscale. A set of analyses considered whether the effects of the D1 and D2 contrasts on participants' willingness to empower Blacks were mediated (see Table 16). Empowerment scores were regressed on D1 (Empathy^{+} *vs.* Control) and D2 (Empathy^{+} *vs.* Black-Empathy^{+}), F (2, 168) = 1.56, p = .213, f^2 = .02; contrary to expectations, there was not an overall effect of the D1 and D2 contrasts on participants willingness to empower Blacks. Unexpectedly, there was not a significant difference on

Table 16

Mediational analyses for the Empowerment Subscale of the ITG-HO measure for Blacks as Model Criterion

	Intergroup Helping		General Empathy		Empathy towards Blacks				Mood Arousal				Intergroup Helping	
	Empowerment		IRI		Affective (Batson)		Cognitive (ITG-PT)		BMIS+		BMIS-		Empowerment	
	path c		*path a*		*path a*		*path a*		*path a*		*path a*		*Final Equation*	
	B	β	B	β	B	β	B	β	B	β	B	β	B	β
D1	.34	.15	.04	.05	-.22	-.09	-.06	-.03	-.20	-.10	.15	.07	.40	.17*
D2	.28	.12	.03	.03	-.06	-.02	-.02	-.01	-.32	-.16	.45	.21*	.35	.15
IRI	-	-	-	-	-	-	-	-	-	-	-	-	.43	.16*
Batson	-	-	-	-	-	-	-	-	-	-	-	-	.30	.33***
ITG-PT	-	-	-	-	-	-	-	-	-	-	-	-	-.04	-.03
BMIS+	-	-	-	-	-	-	-	-	-	-	-	-	-.04	-.03
BMIS-	-	-	-	-	-	-	-	-	-	-	-	-	-.19	-.17*
R^2	.02		.00		.01		.00		.02		.04		.20	
F	1.56		.16		.51		.05		1.66		3.09*		5.65***	

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. D1 = Empathy^{+} *vs*. Control (Empathy^{+} coded as 0 and Control coded as 1), D2 = Empathy^{+} *vs*. Black-Empathy^{+} (Empathy^{+} coded as 0 and Black-Empathy^{+} coded as 1), IRI = Interpersonal Reactivity Index (General Affective and Cognitive Empathic Arousal), Batson = Affective Empathy towards Blacks, ITG-PT = Intergroup Perspective-Taking (Cognitive Empathy towards Blacks), BMIS = Brief Mood Introspection Scale, BMIS+ = BMIS Positive Mood Arousal, BMIS- = BMIS Negative Mood Arousal, MRS = Modern Racism Scale (Prejudice towards Marginalized Groups). The final equation is the analyses for *path c'*, which also included tests of *path b*.

empowerment scores between participants in the Empathy^{+} and Control (i.e., D1), t = 1.65, p = .100, nor the Empathy^{+} and Black-Empathy^{+} conditions (i.e., D2), t = 1.35, p = .180. Thus, *path c* was not significant, and therefore, there is no effect to be potentially mediated. However, to provide a complete summary of the results for the predicted model, the remaining analyses are summarized below. The results for *path a* (i.e., the effect of the D1 and D2 contrasts on the potential mediators) were identical to those described in the mediational analyses for generalized prejudice.

In the final regression, *path c'* was tested. Empowerment for Blacks was regressed on D1 (Empathy^{+} *vs*. Control), D2 (Empathy^{+} *vs*. Black-Empathy^{+}), and the potential mediators, F (7, 163) = 5.65, $p < .001$, $f^2 = .24$. Interestingly, there was a significant difference on willingness to empower Blacks between participants in the Empathy^{+} and Control conditions, t = 2.13, p =.035; contrary to expectations, participants were significantly more willing to empower Blacks in the Control (*vs.* Empathy^{+}) condition. Unexpectedly, there was not a significant difference between participants in the Empathy^{+} *vs*. Black-Empathy^{+} conditions, t = 1.82, p = .071. Because the D1 contrast was not significant in the *path c* analysis, but became significant in the *path c'* analysis, there appears to be some evidence of suppression. Three variables in the final regression significantly predicted scores on the outcome measure; specifically, general empathy, affective empathy towards Blacks, and negative mood arousal significantly predicted willingness to empower Blacks (see Table 16). The other potential mediators included in this regression did not significantly predict scores on the outcome measure, nor were they related to the D1 contrast; thus, they did not appear to be suppressing the effect of D1. Although the D1 contrast and the three *suppressors* had significant regression coefficients

in the final analysis, there was no relationship between D1 and the three *suppressors*. However, in the presence of general empathy, affective empathy towards Blacks, and negative mood arousal, the D1 contrast became significant. Thus, it appears that including general empathy, affective empathy towards Blacks, and negative mood arousal in the *path c'* analysis accounted for some of the variance in D1 unrelated to empowering Blacks, thereby increasing the regression coefficient, which became significant.

In the tests of *path b,* general empathy significantly positively predicted participants' willingness to empower Blacks, $t = 2.04$, $p = .043$; as expected, participants higher (*vs.* lower) in general empathic arousal were more willing to empower Blacks. Affective empathy significantly positively predicted empowerment of Blacks, $t = 4.20$, $p < .001$; consistent with expectations, participants higher (*vs.* lower) in affective empathy towards Blacks were more willing to empower them. Contrary to expectations, cognitive empathy did not significantly predict empowerment scores, $t = -.45$, $p = .655$. As predicted, positive mood did not significantly predict participants' willingness to empower Blacks, $t = -.45$, $p = .655$. However, negative mood significantly negatively predicted empowerment scores, $t = -2.24$, $p = .027$; contrary to expectations, participants lower (*vs.* higher) in negative mood were more willing to empower Blacks. *Overall, the D1 and D2 contrasts did not significantly affect empowerment for Blacks, and thus there was no mediation by general empathy, target-specific empathy, or positive/negative mood arousal.*

Direct Assistance Subscale. A set of analyses considered whether the effects of the D1 and D2 contrasts on directly assisting Blacks (i.e., *path* c) were mediated (see Table 17). Direct assistance scores were regressed on D1 (Empathy^{+} *vs*. Control) and D2

Table 17

Mediational Analyses for the Direct Assistance subscale of the ITG-HO Measure for Blacks as Model Criterion

	Intergroup Helping		General Empathy		Empathy towards Blacks				Mood Arousal				Intergroup Helping	
	Direct Assistance		IRI		Affective (Batson)		Cognitive (ITG-PT)		BMIS+		BMIS-		Direct Assistance	
	path c		*path a*		*path a*		*path a*		*path a*		*path a*		*Final Equation*	
	B	β	B	β	B	β	B	β	B	β	B	β	B	β
D1	.28	.13	.04	.05	-.22	-.09	-.06	-.03	-.20	-.10	.15	.07	.34	.16
D2	.41	.19*	.03	.03	-.06	-.02	-.02	-.01	-.32	-.16	.45	.21*	.46	.21*
IRI	-	-	-	-	-	-	-	-	-	-	-	-	.43	.17*
Batson	-	-	-	-	-	-	-	-	-	-	-	-	.29	.34***
ITG-PT	-	-	-	-	-	-	-	-	-	-	-	-	-.01	-.01
BMIS+	-	-	-	-	-	-	-	-	-	-	-	-	.01	.01
BMIS-	-	-	-	-	-	-	-	-	-	-	-	-	-.09	-.09
R^2	.03		.00		.01		.00		.02		.04		.21	
F	2.37		.16		.51		.05		1.66		3.09*		6.33***	

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. D1 = Empathy^{+} *vs*. Control (Empathy^{+} coded as 0 and Control coded as 1), D2 = Empathy^{+} *vs*. Black-Empathy^{+} (Empathy^{+} coded as 0 and Black-Empathy^{+} coded as 1), IRI = Interpersonal Reactivity Index (General Affective and Cognitive Empathic Arousal), Batson = Affective Empathy towards Blacks, ITG-PT = Intergroup Perspective-Taking (Cognitive Empathy towards Blacks), BMIS = Brief Mood Introspection Scale, BMIS+ = BMIS Positive Mood Arousal, BMIS- = BMIS Negative Mood Arousal, MRS = Modern Racism Scale (Prejudice towards Marginalized Groups). The final equation is the analyses for *path c'*, which also included tests of *path b*.

(Empathy^{+} *vs*. Black-Empathy^{+}), F (2, 168) = 2.37, p = .097, f^2 = .03; contrary to expectations, there was not an overall significant effect of the D1 and D2 contrasts on participants' willingness to directly assist Blacks. Unexpectedly, there was not a significant difference on direct assistance scores between participants in the Empathy^{+} and Control conditions (i.e., D1), t = 1.46, p = .145. There was a significant difference on direct assistance scores between participants in the Empathy^{+} and Black-Empathy^{+} conditions (i.e., D2), t = 2.12, p = .036; as predicted, individuals in the Empathy^{+} (*vs.* Black-Empathy^{+}) condition were significantly less willing to provide direct assistance to Blacks. Thus, *path c* was not significant for the D1 contrast, but was significant for the D2 contrast. The results for *path a* (i.e., the effect of the D1 and D2 contrasts on the potential mediators) were identical to those described for generalized prejudice.

In the final regression, *path c'* was tested. Direct assistance scores were regressed on D1 (Empathy^{+} *vs*. Control), D2 (Empathy^{+} *vs*. Black-Empathy^{+}), and the potential mediators, F (7, 163) = 6.33, p < .001, f^2 = .27. Contrary to expectations, there was not a significant difference on willingness to directly assist Blacks between participants in the Empathy^{+} and Control conditions (i.e., D1), t = 1.98, p = .056. However, there was a significant difference on directly assisting Blacks between participants in the Empathy^{+} and Black-Empathy^{+} conditions (i.e., D2), t = 2.53, p = .012. Thus, *path c'* was not affected by the presence of the mediators.

General empathy significantly positively predicted participants willingness to directly assist Blacks, t = 2.20, p = .029; as expected, participants higher (*vs.* lower) in general empathic arousal were more willing to empower Blacks. Affective empathy significantly positively predicted direct assistance scores as well, t = 4.35, p < .001; as

predicted, individuals higher (*vs.* lower) in affective empathy towards Blacks were more willing to directly assist them. Unexpectedly, cognitive empathy did not significantly predict direct assistance scores, t = -.08, p = .935. Consistent with predictions, positive mood, t = .10, p = .921, and negative mood, t = -1.18, p = .240, did not significantly predict willingness to directly assist Blacks. Thus, *path b* was significant for general and affective empathy, as predicted. Unexpectedly, *path b* was not significant for cognitive empathy. As predicted, *path b* was not significant for positive and negative mood arousal. Overall, none of the potential mediators fulfilled the conditions for mediation. *Therefore, the effects of the D1 and D2 contrasts on willingness to directly assist Blacks were not mediated by general empathy, target-specific empathy, or positive/negative mood arousal.*

Group Change Subscale. Group change scores were regressed on D1 (Empathy^{+} *vs*. Control) and D2 (Empathy^{+} *vs*. Black-Empathy^{+}), F (2, 168) = 2.76, p = .066, f^2 = .03; contrary to expectations, there was not an overall significant effect of the D1 and D2 contrasts on group change scores (see Table 18). There was a significant difference on participants' attribution of responsibility for group change on Blacks between the Empathy^{+} and Control condition (i.e., D1), t = 2.30, p = .023; however, priming empathy "backfired", such that participants in the Empathy^{+} (*vs.* Control) condition were significantly less helpful to Blacks on this measure. Contrary to predictions, there was not a significant difference on group change scores between participants in the Empathy^{+} and Black-Empathy^{+} conditions (i.e., D2), t = 1.53, p = .129. Thus, *path c* was significant for the D1 contrast, but not for the D2 contrast. The results for *path a* (i.e., the effect of the D1 and D2 contrasts on the potential mediators) were identical to those described in the

Table 18

Mediational Analyses for Group Change Subscale of Black ITG-HO Measure as Model Criterion

	Intergroup Helping		General Empathy		Empathy towards Blacks				Mood Arousal				Intergroup Helping	
	Group Change		IRI		Affective (Batson)		Cognitive (ITG-PT)		BMIS+		BMIS-		Group Change	
	path c		*path a*		*path a*		*path a*		*path a*		*path a*		*Final Equation*	
	B	β	B	β	B	β	B	β	B	β	B	β	B	β
D1	.47	.20*	.04	.05	-.22	-.09	-.06	-.03	-.20	-.10	.15	.07	.52	.22*
D2	.32	.13	.03	.03	-.06	-.02	-.02	-.01	-.32	-.16	.45	.21*	.36	.15
IRI	-	-	-	-	-	-	-	-	-	-	-	-	.17	.06
Batson	-	-	-	-	-	-	-	-	-	-	-	-	.25	.27**
ITG-PT	-	-	-	-	-	-	-	-	-	-	-	-	-.01	-.01
BMIS+	-	-	-	-	-	-	-	-	-	-	-	-	-.04	-.04
BMIS-	-	-	-	-	-	-	-	-	-	-	-	-	-.09	-.08
R^2	.03		.00		.01		.00		.02		.04		.12	
F	2.76		.16		.51		.05		1.66		3.09*		3.14**	

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. D1 = Empathy^{+} *vs*. Control (Empathy^{+} coded as 0 and Control coded as 1), D2 = Empathy^{+} *vs*. Black-Empathy^{+} (Empathy^{+} coded as 0 and Black-Empathy^{+} coded as 1), IRI = Interpersonal Reactivity Index (General Affective and Cognitive Empathic Arousal), Batson = Affective Empathy towards Blacks, ITG-PT = Intergroup Perspective-Taking (Cognitive Empathy towards Blacks), BMIS = Brief Mood Introspection Scale, BMIS+ = BMIS Positive Mood Arousal, BMIS- = BMIS Negative Mood Arousal, MRS = Modern Racism Scale (Prejudice towards Marginalized Groups). The final equation is the analyses for *path c'*, which also included tests of *path b*.

mediation analyses for generalized prejudice.

In the final regression, *path c'* was tested. Group change for Blacks was regressed on D1 (Empathy^{+} *vs*. Control), D2 (Empathy^{+} *vs*. Black-Empathy^{+}), and the mediators, $F(7, 163) = 3.14$, $p = .004$, $f^2 = .14$. There was a significant difference on group change scores between participants in the Empathy^{+} and Control conditions (i.e., D1), $t = 2.61$, $p = .010$. There was not a significant difference on group change scores between participants in the Empathy^{+} and Black-Empathy^{+} conditions (i.e., D2), $t = .63$, $p = .533$.

Contrary to expectations, general empathy, $t = .75$, $p = .453$, and cognitive empathy, $t = -.16$, $p = .872$, did not significantly predict group change scores. As expected, positive, $t = -.47$, $p = .64$, and negative mood arousal, $t = -1.03$, $p = .306$, did not significantly predict group change scores. Affective empathy for Blacks positively significantly predicted group change scores, $t = 3.31$, $p = .001$; participants higher (*vs.* lower) in affective empathy were more helpful to Blacks on this measure. *Path b* was not significant for general empathy or cognitive empathy, contrary to predictions. As predicted, *path b* was not significant for positive and negative mood arousal. As expected, *path b* was significant for affective empathy. Overall, support for mediation was not found because none of the potential mediators had both significant *a* and *b-paths. Therefore, the effects of the D1 and D2 contrasts on group change scores were not mediated by general empathy, target-specific empathy, or positive/negative mood.*

Black-White IAT (i.e., implicit bias). A set of analyses were conducted to determine whether the effects of the D1 and D2 contrasts on implicit prejudice groups were mediated by general empathy, target-specific empathy, or positive/negative mood (see Table 19). Implicit prejudice was regressed on D1 (Empathy^{+} *vs*. Control) and D2

Table 19

Mediational Analyses for the Black-White IAT as Model Criterion

	Implicit Prejudice		General Empathy		Empathy towards Blacks				Mood Arousal				Implicit Prejudice	
	Black-White IAT		IRI		Affective (Batson)		Cognitive (ITG-PT)		Black-White IAT		BMIS-		Black-White IAT	
	path c		*path a*		*path a*		*path a*		*path a*		*path a*		*Final Equation*	
	B	β	B	β	B	β	B	β	B	β	B	β	B	β
D1	.10	.10	.04	.05	-.22	-.09	-.06	-.03	-.20	-.10	.15	.07	.11	.11
D2	.30	.30**	.03	.03	-.06	-.02	-.02	-.01	-.32	-.16	.45	.21*	.29	.29**
IRI	-	-	-	-	-	-	-	-	-	-	-	-	-.11	-.10
Batson	-	-	-	-	-	-	-	-	-	-	-	-	.00	.01
ITG-PT	-	-	-	-	-	-	-	-	-	-	-	-	.03	.08
BMIS+	-	-	-	-	-	-	-	-	-	-	-	-	.02	.04
BMIS-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.10
R^2	.07		.00		.01		.00		.02		.04		.09	
F	6.18**		.16		.51		.05		1.66		3.09*		2.22*	

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. D1 = Empathy^{+} *vs*. Control (Empathy^{+} coded as 0 and Control coded as 1), D2 = Empathy^{+} *vs*. Black-Empathy^{+} (Empathy^{+} coded as 0 and Black-Empathy^{+} coded as 1), IRI = Interpersonal Reactivity Index (General Affective and Cognitive Empathic Arousal), Batson = Affective Empathy towards Blacks, ITG-PT = Intergroup Perspective-Taking (Cognitive Empathy towards Blacks), BMIS = Brief Mood Introspection Scale, BMIS+ = BMIS Positive Mood Arousal, BMIS- = BMIS Negative Mood Arousal, MRS = Modern Racism Scale (Prejudice towards Marginalized Groups). The final equation is the analyses for *path c'*, which also included tests of *path b*.

(Empathy^{+} *vs*. Black-Empathy^{+}), F (2, 161) = 6.18, p = .003, f^2 = .08; as expected, there was an overall significant effect of the D1 and D2 contrasts on implicit bias. Contrary to expectations, there was not a significant difference on implicit prejudice between participants in the Empathy^{+} and Control conditions (i.e., D1), t = 1.18, p = .240. There was a significant difference in implicit bias between participants in the Empathy^{+} and Black-Empathy^{+} conditions (i.e., D2), t = 3.47, p = .001; unexpectedly, participants exposed to integral (*vs.* incidental) empathy primes expressed more pro-White bias. Thus, *path c* was not significant for the D1 contrast, but was significant for the D2 contrast. The results for *path a* were identical to those described for generalized prejudice.

In the final regression, *path c'* was tested. Implicit prejudice was regressed on D1 (Empathy^{+} *vs*. Control), D2 (Empathy^{+} *vs*. Black-Empathy^{+}), and the potential mediators, F (7, 156) = 2.22, p = .036, f^2 = .10. As with the analysis of *path c*, there was not a significant difference on implicit prejudice between participants in the Empathy^{+} and Control condition (i.e., D1), t = 1.23, p = .219. However, as before, there was a significant difference in implicit prejudice between participants in the Empathy^{+} *vs*. Black-Empathy^{+} conditions, t = 3.25, p = .001. Thus, the effects of the D1 and D2 contrasts were not made non-significant in the presence of the mediators, and the magnitudes of their regression coefficients did not differ meaningfully in the presence of the mediators, indicating no evidence of full or partial mediation.

General empathy, t = -1.13, p = .261, affective empathy, t = .10, p = .925, cognitive empathy, t = .954, p = .342, positive mood, t = .49, p = .626, and negative

mood, $t = 1.23$, $p = .219$, did not significantly predict implicit prejudice. Thus, *path b* was not significant for general empathy, affective empathy, or cognitive empathy, contrary to expectations. As predicted, *path b* was not significant for positive or negative mood. None of the potential mediators fulfilled the conditions for mediation (Baron & Kenny, 1986). *Therefore, the effects of the D1 and D2 contrasts on implicit prejudice were not mediated by general empathy, target-specific empathy, or positive/negative mood.*

Discussion

There were three main goals for Study 2. First, Study 2 aimed to strengthen the effects found for exposure to subliminal empathy-relevant primes (*vs.* primes related to the opposite of empathy) for prejudice and empowerment of immigrants in Study 1. Study 2 considered the potential benefits of exposure to subliminal empathy primes (relative to no prime) for prejudice and helping behaviour. Secondly, Study 2 was designed to potentially strengthen the effects of subliminal priming by pairing empathy with the social category Blacks (i.e., integral empathy primes) and comparing the effects to incidental empathy primes. Thirdly, Study 2 considered potential mechanisms for any effects (i.e., general empathic arousal, affective empathy towards Blacks, cognitive empathy towards Blacks, positive mood, and negative mood).

Study 2 did not find a significant impact of exposure to subliminal, incidental (i.e., no category paired) empathy primes, relative to no prime (i.e., D1 contrast), on empowering marginalized groups or Blacks, directly assisting marginalized groups or Blacks, or implicit prejudice (i.e., Study Goal 1). The D1 contrast was significant for

generalized prejudice and prejudice towards Blacks, as well as participants' expectancy for group change from both marginalized groups and Blacks. However, priming incidental empathy (relative to no prime) impacted scores on the outcome measures in an unexpected way. Specifically, exposure to subliminal, incidental empathy primes (relative to no prime) "backfired", such that these participants expressed significantly more negative attitudes towards both marginalized groups and Blacks, as well as expecting more group change from marginalized groups and Blacks.

The present project considered *subliminal* priming to potentially evade such "backfiring" effects (as might occur if resisting the influence of a supraliminal prime). Some past research on the effect of empathy on intergroup relations using explicit techniques has similarly exposed the "dark side" of empathy (Cikara, et al., 2011; Galinsky et al., 2005; McGregor, 1993; Vorauer & Sasaki, 2009). For instance, Vorauer and Sasaki (2009) found that following a perspective taking task, participants were less prejudicial towards the target outgroup, but expressed more negative attitudes towards their interaction partner, especially when higher in initial levels of prejudice. However, given the research demonstrating improved intergroup relations using explicit empathy techniques (e.g., Batson et al., 1997; Stephan & Finlay, 1999), and the success of research using subliminal priming in prejudice research (e.g., Araya et al., 2002; Wittenbrink et al., 1997), the present project used subliminal priming in an attempt to develop a technique that would improve attitudes and behaviours towards outgroups. Unfortunately, Study 2 was unable to strengthen the effects found in Study 1. In fact, exposure to

subliminal, incidental empathy primes (*vs.* no prime) had negative implications for prejudice and helping of marginalized groups and Blacks.

The "backfiring" effects demonstrated are consistent with research suggesting that the benefits of empathy are not generally extended to outgroup members (de Waal, 2009; Neumann, et al., 2013; Xu et al., 2009). de Waal (2009) suggested that empathy is an emotion typically extended to those socially close (i.e., our ingroups), a tendency found in both humans and primates. Recent research on empathy towards the ingroup and racial/ethnic outgroups has found that responses are different for the ingroup (*vs.* outgroup) members (Neumann, Boyle, & Chan, 2013); empathy is not simply a disposition expressed to the same degree for both ingroup and outgroup targets. Therefore, exposure to subliminal, incidental empathy primes may have inadvertently activated empathy in a default manner that favoured the ingroup on the outcome measures (i.e., heightened prejudice and less willingness to help marginalized groups and Blacks). This is consistent with the *ingroup empathy hypothesis* proposed by Batson, Turk, Shaw, and Klein (1995), whereby empathic responses favour ingroup (over outgroup) members. Overall, the results for the D1 contrast in Study 2 and past research (de Waal, 2009; Neumann, et al., 2013; Xu et al., 2009) suggest that, by default, empathy is *ingroup*-relevant, unless other conditions exist to expand the inclusiveness of empathy. Cikara and colleagues (2011) point out that, unless directed towards a specific social category, empathy may only be beneficial when the target individual(s) are ingroup members.

Exposure to subliminal empathy primes may have impacted bias towards marginalized groups and/or Blacks through increases in empathy towards the ingroup (but not the outgroup). The Batson Empathy measure, used in Study 2 to measure affective empathy towards Blacks (outgroup) following the priming task, could not have detected effects of the contrast variables on empathy towards the ingroup, because there were no items relevant to empathy for *ingroup* members. Similarly, the IRI, used in Study 2 to measure general empathic arousal following the priming task, could not have captured increases in empathy towards the ingroup, because the items were in reference to consistent patterns of empathic responses. Similar to research in the intergroup literature that finds ingroup favouritism does not necessarily coincide with outgroup derogation (Brewer, 1999), it is possible that the manipulation impacted ingroup empathy without affecting empathy towards outgroups. Future research could consider the impact of exposure to subliminal empathy primes on both empathy towards the ingroup, marginalized groups, and outgroup(s) to clarify how such a procedure impacts intergroup bias.

Overall, scores for the potential mediators considered in Study 2 did not explain the effects found. In some cases, however, certain potential mediators acted as *suppressor* variables. Specifically, (a) general empathy and affective empathy towards Blacks acted as suppressors for the D2 contrast predicting direct assistance of marginalized groups, and (b) general empathy, affective empathy towards Blacks, and negative mood arousal, acted as suppressors for the D1 contrast predicting empowerment of Blacks. In addition,

both the D1 and D2 regression coefficients were slightly larger in the *path c'* analysis, relative to the *path c* analysis, for the MRS for Blacks, General ITG-HO Empowerment and Group Change subscales, as well as ITG-HO for Blacks Direct Assistance and Group Change subscales; however, the contrast variables did not reach significance in the presence of the potential mediators in these cases. Thus, inclusion of the potential mediators generally increased the regression coefficient of the contrast variables, by accounting for shared variance that was unrelated to the outcome measure(s). However, given that the *suppressor* variables were not related to the contrast(s) involved in any case, which is typically a key element in suppression (Cohen et al., 2003), there was not strong support for suppression with regard to any dependent variable.

Overall, Study 2 was unable to reduce intergroup bias (i.e., exposure to incidental empathy primes, relative to no prime, did not reduce intergroup bias on the outcome measures; Study Goal 1). Some of the effects appear to be consistent with the *ingroup empathy hypothesis* and previous empathy research indicating "backfiring" effects; however, further research is required to clarify whether this is the case given that ingroup empathy measures were not included in Study 2. Study 2 also considered the effects of pairing empathy with the social category Blacks, specifically the effects of priming *integral empathy* (i.e., empathy-category paired) relative to priming *incidental empathy* (i.e., no category paired; i.e., D2 contrast; Study Goal 2). Specifically, the effects of subliminal, incidental (*vs*. integral) empathy primes were significantly different for generalized prejudice, direct assistance for Blacks, and implicit prejudice (there was not a

significant impact on the other outcome measures). Thus, pairing empathy primes with the social category Blacks (*vs*. empathy alone) resulted in significantly less negative attitudes towards marginalized groups and significantly more willingness to provide direct assistance to Blacks (as predicted), and significantly more implicit prejudice (contrary to predictions). Specifically, pairing the subliminal empathy prime with a social category reduced the negative effect of priming an ingroup-relevant construct on intergroup bias for prejudice towards marginalized groups and direct assistance for Blacks. However, subliminal empathy primes paired with Blacks had a negative impact on implicit prejudice, such that pro-White biases were stronger for participants exposed to integral empathy primes, relative to participants exposed to incidental empathy primes. Consistent with Cikara and colleagues' (2011) argument, exposure to incidental empathy primes (*vs.* no prime) was not beneficial in terms of reducing outgroup prejudice or helping of marginalized groups. However, when the empathy prime was paired with Blacks (i.e., integral), the negative effects of empathy for outgroups were absent (in the case of explicit prejudice towards marginalized groups and directly assistance of Blacks).

Interestingly, priming integral empathy was detrimental for implicit prejudice. The IAT was not significantly related to any of the potential mediators considered, or any of the other dependent measures examined. Thus, the potential mediators considered did not explain why this effect occurred. In addition, this effect was not consistent with the results of the other measures. However, the IAT was unique from the other dependent variables because it examined bias towards Blacks relative to Whites (that is, a difference

score); none of the other measures in Study 2 considered attitudes or behaviours relatively (i.e., comparing ingroups to outgroups). Given that exposure to empathy primes (*vs.* empathy paired with Black primes) may have increased empathy towards the ingroup, attitudes towards ingroup members may also have been impacted. If so, the IAT was the only measure in Study 2 that could have captured a pro-ingroup bias. It is possible that exposure to empathy primes (*vs.* empathy paired with Black primes) also improved explicit attitudes and helping behaviour towards the ingroup (relative to marginalized groups or Blacks), but it is unclear whether this is the case based on the measures used.

Overall, some of the significant D2 effects were consistent with predictions relevant to Study Goal 2. However, the D2 contrast did not significantly impact most of the outcome measures. Importantly, the findings for the D2 contrast were informative for intergroup research. Previous studies have demonstrated the negative effect of priming outgroup categories. For instance, Wittenbrink et al. (1997) found that priming the word "Black" lead to faster recognition of negative stereotypes associated with Blacks (relative to recognition of positive stereotypes regarding Blacks, irrelevant attributes, or positive/negative stereotypes related to Whites). Moreover, priming an outgroup (i.e., Blacks) had negative implications, contrary to priming the ingroup (i.e., Whites), which exerted positive effects; participants primed with Whites were faster at recognizing positive stereotypes regarding Whites (relative to the other stimuli). Similarly, Rios, Ybarra, and Sanchez-Burks (2013, Study 3) found that participants primed with distrust

using a scrambled sentence task and an outgroup later in a categorization task exhibited higher levels of unpredictability in their self-presentations, relative to participants primed with distrust and the ingroup. Rios et al. (2013) argue that a tendency to be unpredictable with outgroup members may make it difficult to have positive intergroup interactions. Specifically, if outgroups are primed along with distrust, individuals may respond with unpredictable behaviour as a defensive move.

Unfortunately, this may be problematic for positive relations between groups, which may require understanding and predictability. Although such research demonstrates the potentially negative implications of priming an outgroup, some of the D2 contrast results in Study 2 find that pairing Blacks (an outgroup) with empathy (an ingroup-relevant construct by default) led to less negative attitudes and behaviour (*vs.* priming empathy alone). Thus, although automatic responses to empathy primes and/or Blacks can be potentially detrimental to intergroup relations (as demonstrated by the results of the D1 contrast, and past research which finds empathy by default to positively impact the ingroup but not the outgroup; de Waal, 2009; Neumann, et al., 2013; Xu et al., 2009), pairing empathy with Blacks positively affected negative attitudes towards disadvantaged groups and helping Blacks, relative to priming empathy alone. However, consistent with research demonstrating the potentially negative effects of subliminally priming outgroups (e.g., Eberhardt, Goff, Purdie, & Davies, 2004), participants exposed to integral (*vs.* incidental) empathy primes expressed more pro-White bias on the Implicit Association Task. Moreover, the IAT was not correlated with any of the other measures.

In fact, the impact of the contrasts on the explicit (i.e., MRS measures) and implicit (i.e., IAT) measures were not consistent either. Given that this is common in intergroup research, which finds that implicit biases are often not associated with explicit views because of distinct underlying processes (e.g., Greenwald, Poehlman, Uhlmann, et al., 2009), it is possible that the manipulation may have impacted the explicit and implicit measures differently, with implicit and explicit mechanisms representing distinct types of processing.

Moreover, the D2 results demonstrate that empathy primes paired with Blacks, relative to empathy only primes, had some positive effects for intergroup bias towards the target category as well as other marginalized groups (i.e., by reducing the negative effects of empathy primes). Specifically, exposure to empathy primes paired with Black primes (relative to empathy only primes) led to significantly less negative attitudes towards women, Muslims, and the LGBT community and significantly more direct assistance of Blacks. In this way, the positive effects of integral empathy primes extended to disadvantaged groups other than the target category; this has been referred to in the literature as *secondary transfer effects* (Lolliot et al., 2013). Specifically, just as negative attitudes (i.e., prejudice) towards one outgroup are likely to generalize towards other outgroups (Allport, 1954; Bäckström & Björklund, 2007), a reduction in prejudice towards one outgroup has also been found to be generalizable to other outgroups. Lolliot et al. (2013) suggest that the effects of *empathy* on attitudes towards outgroups can demonstrate secondary transfer effects as well. However, research on the impact of

empathy on attitude generalization from primary to secondary outgroups has produced mixed results.

Galinsky and Moskowitz (2000) found that perspective taking instructions administered before an empathy-inducing task improved attitudes towards the target outgroup (the elderly) as well as another unrelated outgroup (African Americans). Thus, the improved attitudes from the task for the target outgroup generalized to a secondary unrelated outgroup as well. However, Vescio et al. (2003) failed to find secondary transfer effects in a similar study. Although exposure to subliminal, integral (*vs.* incidental) empathy primes in Study 2 of the present project resulted in less prejudice towards marginalized groups and increased direct assistance of Blacks, there was not clear evidence to suggest secondary transfer effects. For instance, priming integral (*vs.* incidental) empathy resulted in less negative attitudes towards marginalized groups, but not towards Blacks. Therefore, the results do not demonstrate an effect of priming empathy paired with Blacks (*vs.* empathy alone) on prejudice towards Blacks, as well as marginalized groups. If both prejudice towards the target category and other outgroups had been present, attitude generalization may have occurred. Thus, attitude generalization does not appear to be present, and therefore, there was not support for the secondary transfer effect in Study 2. Given the inconsistent findings across Study 1 and 2, and because the potential mediators tested did not explain the effects found, it is possible that some of the findings in Study 2 were a result of Type I Error. Thus, further research on the subliminal priming techniques used for Study 1 and 2 is required to discern whether

this is the case. Future research could also consider the potential for attitude generalization.

Although the present project did not explore the potential generalization effects of priming incidental (relative to integral) empathy on the outcome variables for the target social category to marginalized groups, five potential mediators were considered for the predicted effects (i.e., Study Goal 3). However, in Study 2, the pattern of effects demonstrated were not explained by general empathic arousal, affective empathy towards Blacks, cognitive empathy towards Blacks, positive mood, or negative mood (i.e., none of these potential mediators fulfilled all of the conditions outlined by Baron & Kenny, 1986). As previously discussed, given that the manipulation may have impacted ingroup (but not outgroup) empathy, the Batson Empathy measure and IRI may not have detected differences in general or affective empathy towards Blacks because they did not include items relevant to the ingroup. Similarly, the ITG-PT measure tapped cognitive empathy towards Blacks, but not cognitive empathy towards the ingroup. Given that perspective-taking of Blacks may not have been affected by exposure to empathy primes, relative to no prime or empathy paired with Black primes, this measure may not have been able to detect any effects on cognitive empathy. Future research on subliminal exposure to empathy primes may benefit from using an empathy measure designed to measure empathy towards both the ingroup and outgroup.

Interestingly, mood arousal significantly predicted some of the outcome measures, contrary to expectations. Specifically, higher positive mood arousal significantly

predicted more prejudice towards marginalized groups and Blacks. Higher negative mood significantly predicted more generalized prejudice as well. In addition, higher negative mood significantly predicted less willingness to empower marginalized groups and less expectancy for group change from marginalized groups as well. These effects are consistent with past research suggesting that both positive and negative affect can be related to negative intergroup effects, although there are some mixed findings. For example, DeSteno, Dasgupta, Bartlett, and Cajdric (2004) found that experiencing sadness did not (by default) result in greater prejudice towards outgroups. Thus, DeStano and colleagues (2004) argued that emotions relevant to the intergroup context would predict automatic intergroup biases, but that affect unrelated to outgroups (i.e., such as incidental sadness) would not. On the other hand, Kossowska, Bukowski, and Van Hiel (2008) found that incidental sadness heightened prejudices. Similarly, in Study 2, negative mood arousal was related to increased intergroup bias. Bodenhausen, Kramer, and Süsser (1994) found that individuals induced to experience happiness (i.e., positive affect) relied more on stereotypes to make social judgements. Similarly, in Study 2, positive mood arousal predicted more prejudice towards marginalized groups and Blacks.

It is unclear based on the mediators measured in Study 2 why positive and negative mood arousal were related to the outcome measures. However, past research on the effects of positive and/or negative mood on attitude change demonstrate that both can reduce deliberative cognitive processing, leaving individuals to rely more on heuristics (Mackie & Worth, 1989; Park & Banaji, 2000). Thus, lowered cognitive capacities may

explain why individuals in a positive mood rely more on stereotypes. Similarly, certain negative mood states (e.g., anger) can lead to more impulsive, non-deliberative behaviour, resulting in increased intergroup bias (e.g., Bodenhausen, Sheppard, & Kramer, 1994). However, additional research is needed to clarify the situational determinants (i.e., moderators) and potential cognitive deficits that may explain (i.e., mediate) the relationships between mood and intergroup bias.

Limitations. Overall, the changes made from Study 1 to Study 2 were not successful in strengthening the technique. Whereas Study 1 examined the impact of the contrasts on prejudice, discrimination, and helping towards immigrants (an outgroup for all participants used in the analyses), Study 2 considered a target outgroup, but also included a measure for generalized prejudice which tapped attitudes towards marginalized groups; some participants were part of the marginalized groups considered (e.g., women) [10]. Specifically, the General MRS examined attitudes towards women, Muslims, and the LGBT community. Thus, this outcome variable was measuring attitudes towards both outgroups and potentially ingroups for some participants. Because

[10] Because many participants were members of some of the groups on the General MRS (e.g., women), but not members of other groups on the measure (e.g., Muslims, LGBT members), a mean of the General MRS items that were not female-relevant was created. Scores for this new measure (i.e., prejudice towards Muslims and LGBT members) were regressed on D1 and D2 (i.e., equivalent to the *path c* analysis), F (2, 168) = 2.43, p = .092. Data from all participants (i.e., women and men) was included in the analysis. Both the D1, t = -1.87, p = .063, and D2, t = -1.92, p = .056, contrasts were non-significant. Both of these contrasts were significant when all of the General MRS items were included in the original *path c* analysis. It is worth noting, however, that items on the measures used to examine bias towards marginalized groups were arbitrarily assigned to women, LGBT members, and Muslims. That is, of the total 7 items on the General MRS, three items were arbitrarily made relevant to women, two relevant to LGBT members, and two relevant to Muslims. Because the decision to assign certain items to each of the marginalized groups of interest was arbitrary, it is not recommended to compare the effects on prejudice towards women, Muslims, and LGBT members. For instance, it is possible that the results differed because the items removed were relevant to women, or perhaps the items removed were essential to measuring prejudice.

79.5% of the sample used for analyses was female, and a third of the questions on the General MRS were relevant to women, the majority of participants were responding to some ingroup-relevant items on this measure. In addition, a small subset (i.e., 6.4%) of the final sample did not identify as heterosexual (i.e., homosexual, bisexual, asexual, or questioning) yet a third of the items on the General MRS were relevant to the LGBT community[11]. Thus, the MRS for Blacks presented items for a social category that constituted an outgroup for all participants in the sample (i.e., Blacks), but the General MRS included items towards social categories that may have been ingroups for some participants (i.e., women, LGBT members). Participants who self-identified as part of a marginalized social category may have responded differently to items regarding another marginalized group (on the General MRS) based on similar experiences (e.g., maltreatment based on their marginalized status by majority group members). However, despite the limitations to Study 2, the present project informs and extends the literature on empathy research, subliminal priming, implicit measures, and prejudice-reduction.

General Discussion

The present project considered the effects of using empathy in intergroup relations through a novel technique (i.e., subliminal priming). Study 1 adapted the Lexical

[11] A mean of the General MRS items which were not LGBT-relevant was created. Scores on this new variable were regressed on D1 and D2, F (2,168) = 3.23, p = .042. The D1, t = -2.31, p = .022, and D2 contrasts, t = -2.04, p = .043, were both significant. All participants (i.e., including LGBT members) were included in the analysis. In this case, the results are identical to the original results with all of the items. However, as noted in Footnote 10, the decision to assign items on the General MRS to particular marginalized groups was arbitrary. Thus, it is not clear based on this analysis whether responses to LGBT-relevant items were different than responses to items relevant to women and Muslims. Future research could consider the impact of exposure to subliminal empathy-relevant primes on attitudes towards marginalized groups which participants are members of, relative to negative attitudes towards marginalized outgroups.

Decision Task from Dijksterhuis et al. (2008) for the purposes of the present project, comparing the effects of using subliminal empathy-relevant constructs as primes (to no prime and priming the opposite of empathy) on prejudice, discrimination, and helping. In Study 1, exposure to subliminal, incidental (i.e., unrelated to a social group) empathy-relevant primes resulted in less negative attitudes towards immigrants and more willingness to empower them, compared to participants exposed to subliminal primes related to the opposite of empathy. However, there were no significant differences between participants exposed to subliminal empathy-relevant primes relative to control participants. None of the effects found were moderated by individual differences on disgust sensitivity, intergroup disgust sensitivity, intergroup anxiety, right-wing authoritarianism, or social dominance orientation. Thus, Study 1 was able to avert the potential issues associated with past explicit priming procedures and offered promise for implicit priming of empathy as a prejudice-reduction strategy (see Table 20 for a summary of the Study 1 findings).

In Study 2, direct empathy primes (i.e., "empathy" and "sympathy") were used in an attempt to strengthen the effects found in Study 1. In Study 2 we considered Blacks as the target outgroup, and generalized prejudice towards three marginalized groups (i.e., Muslims, women, LGBT members) to build upon the research on the use of empathy on prejudice towards ethnic/racial outgroups. Study 2 also considered potential mechanisms that could explain the predicted effects. Unexpectedly, in Study 2 exposure to subliminal, incidental (i.e., no category paired) empathy primes (*vs.* no prime) "backfired" for both

generalized prejudice and prejudice towards Blacks, as well as helping (i.e., group change) marginalized groups and Blacks. Encouragingly, however, priming integral (*vs.* incidental) empathy led to less generalized prejudice (as predicted), more direct assistance of Blacks (as predicted), but more implicit prejudice (contrary to expectations). Thus, priming empathy backfired, but priming empathy paired with an outgroup (Blacks) produced biases more akin to the control condition in the case of generalized prejudice and direct assistance of Blacks. Priming integral (*vs.* incidental) empathy exacerbated implicit prejudice. The potential mediators considered did not explain any of the effects found (see Table 21 for a summary of the Study 2 findings). Over the next few sections, I will outline some of the key themes and considerations that have emerged.

Using Empathy-Relevant *versus* Actual Empathy-Specific Primes

The subliminal priming manipulation in Study 1 used empathy-*relevant* constructs but not empathy itself (consistent with standard priming procedures; e.g., Bargh et al., 1996), whereas the Study 2 manipulation used the construct directly (in the Empathy^{+} and Black-Empathy^{+} conditions). In Study 1, the empathy-relevant primes resulted in less prejudice towards immigrants and led to more willingness to empower immigrants as well (*vs.* priming the opposite of empathy). The subliminal priming material in Study 2 used empathy itself (i.e., "empathy" and "sympathy"), which backfired. To the extent that empathy is by default an ingroup-relevant reaction (Batson et al., 1995; de Waal, 2009), using subliminal, incidental (i.e., no social category paired) empathy primes in Study 2 may have inadvertently led to reactions that favoured the

Table 20

Summary of Study 1 Results

	Effect of Manipulation		
	D1	D2	Moderation
Immigrant Modern Racism Scale	0	+	0
Immigrant Intergroup Helping Orientation: Empowerment	0	+	0
Immigrant Intergroup Helping Orientation: Direct Assistance	0	0	0
Immigrant Intergroup Helping Orientation: Group Change	0	0	0
Resource Allocation Task for Immigrants	0	0	0

Note. "0" = not-significant, "+" = significant (as expected), "-" = significant (contrary to expectations). The moderation analyses refer to whether Disgust Sensitivity, Intergroup-Disgust Sensitivity, Intergroup Anxiety, Social Dominance Orientation, and/or Right-wing Authoritarianism interacted with the effects of the D1 and D2 contrasts. D1= Empathy^{+} vs. Control, D2 = Empathy^{+} vs. Empathy^{-}.

Table 21

Summary of Study 2 Results for the Outcome Variables

	Effect of Manipulation		
	D1	D2	Mediation
General Modern Racism Scale	-	+	0
Modern Racism Scale for Blacks	-	0	0
General Intergroup Helping Orientation: Empowerment	0	0	0
General Intergroup Helping Orientation: Direct Assistance	0	0	0
General Intergroup Helping Orientation: Group Change	-	0	0
Black Intergroup Helping Orientation: Empowerment	0	0	0
Black Intergroup Helping Orientation: Direct Assistance	0	+	0
Black Intergroup Helping Orientation: Group Change	-	0	0
Black White Implicit Association Task	0	-	0

Note. "0" = not-significant, "+" = significant (as expected), "-" = significant (contrary to expectations), "Effect of the D1 and D2 contrasts" = whether there was a significant effect on the outcome variable in the *path-c* regression for the mediation analysis (which included only D1 and D2), "Mediation" = whether the effects were mediated. D1 = Empathy^{+} *vs*. Control, D2 = Empathy^{+} *vs*. Black-Empathy^{+}.

ingroup (i.e., Whites). For example, exposure to subliminal, incidental empathy primes led to higher levels of generalized prejudice (*vs.* no prime or integral empathy) and prejudice towards Blacks (*vs.* integral empathy). Although Study 2 sought to strengthen the effects by priming empathy itself, using direct subliminal primes of empathy was not conducive to improving intergroup relations.

Interestingly, in Study 1, priming empathy-relevant constructs did not backfire. Because the present project was (to our knowledge) the first to use subliminal empathy-relevant or empathy primes, it is difficult to pinpoint the reason why. The aim of the present project was to develop a subliminal procedure to improve intergroup relations, building upon the success of previous empathy-prejudice research (e.g., Finlay & Stephan, 2000). Priming procedures typically use numerous synonyms for the construct of interest to prime the construct (e.g., Bargh et al., 1996). Standard empathy inducing techniques often use perspective-taking tasks. Whereas Study 1 included "perspective" as part of the subliminal primes, Study 2 did not. Given the success of perspective taking techniques in prejudice reduction research (e.g., Batson, Polycarpou, et al., 1997), perhaps any benefit of empathy on outgroup attitudes and behaviours stems from the role-taking aspect. It is also possible that one of the other empathy-relevant constructs, or a combination of some/all of the empathy-relevant subliminal primes used in Study 1 were responsible for the benefits (relative to participants exposed to primes related to the opposite of empathy). Because Study 1 did not consider potential mediators, and because the present project did not explore the empathy-relevant constructs individually, it is

unclear which is the case; for instance, it is possible that the term "perspective" is influential on intergroup bias, but "compassion" is not (or vice versa). It is possible that the affective component of empathy (as attempted to prime in Study 2) is not as easily extended to outgroup members, as is the cognitive (i.e., perspective) taking component (as attempted in Study 1 through the use of such primes as "perspective" and "understanding").

Although the incidental empathy primes in Study 2 did not include ingroup category primes (i.e., Whites), it may have indirectly activated that social category given the intergroup nature of Black-White relations. After all, priming constructs relevant to ingroup memberships activates the ingroup and related concepts as well. For example, Johnson, Rowatt and LaBouff (2010) found that priming (mostly White) Americans with Christian religious-relevant concepts such as "Bible" (*vs.* neutral words) made them more negative towards African Americans. Although participants were not primed with the ingroup, Johnson et al. (2010) suggest that priming Christianity may have potentially also activated related concepts such as Americanism, some of which may have been related to outgroup derogation. For example, priming Christianity may have also primed Right-wing Authoritarianism or religious fundamentalism, both of which are related to prejudice (Altemeyer, 1981; Laythe, Finkel, & Kirkpatrick, 2001). The activation of associated constructs via priming procedures has been labelled as "unintended processing effects" (Bargh & Chartrand, 2000). Similarly, in our Study 2, priming incidental empathy may have activated ingroup favouritism and related concepts (i.e., Whites,

helping behaviour towards the ingroup relative to outgroups). Given that empathy is by default in-group relevant (de Waal, 2009), such an unintended effect seems plausible and consistent with the findings.

Thus, for intergroup relations to be positively affected by subliminal empathy primes, the activation of additional constructs may be necessary. Specifically, priming incidental empathy by subliminally flashing the words "empathy" and "sympathy" may be sufficient to produce benefits towards ingroup members (a potential we did not directly assess, but could be attempted in future research). However, for empathy to positively impact intergroup attitudes and behaviour, more of the components of empathy related to positive intergroup relations (e.g., understanding, compassion, etc.), including the cognitive elements, may need to be primed (i.e., rather than only priming "empathy"). In addition, the empathy-relevant constructs used for subliminal priming may need to counteract the negative affect associated with the target category. Batson and Ahmed (2009) suggest that for empathy to improve intergroup relations through contact, it needs to be personalized. Similarly, for empathy to improve intergroup relations through subliminal priming, the constructs used may need to be adapted for the target group. Thus, given that empathy is typically extended to ingroup members, a stronger prime (i.e., multiple components of empathy, components relevant to empathizing with outgroup members) may need to be activated, rather than priming only incidental "empathy."

In addition, the empathy prime may need to be sensitive to the emotions required to overcome the historical underpinnings of conflict or prejudice with the outgroup of interest. For example, empathy interventions targeting prejudice and discrimination towards Blacks may need to prime aspects relevant to and opposing any negative integral associations with Blacks. For instance, Payne (2001) demonstrated that because Blacks are stereotypically associated with violence in Western culture, White participants more quickly recognize violence-related objects (e.g., a gun) after being primed with the social category Blacks (*vs.* Whites; see also Wittenbrink, et al., 1997). Thus, subliminal techniques using social category primes may need to better tailor the constructs used, for instance by priming empathy-relevant constructs that are also relevant to the target outgroup in a prosocial manner. For instance, the target group may be one that participants have minimal contact with or exposure to so they may not be able to understand their point of view. For such groups, "understanding" may be an especially relevant aspect of empathy to include as a prime. Overall, the difference in the effects found across Study 1 and 2 highlight the sensitivity of such procedures to subtle changes.

Subliminal Priming Techniques

Whereas past research on empathy and prejudice has mainly used explicit techniques to impact negative attitudes and behaviours towards marginalized groups, a novel means of using empathy for intergroup relations was put forward in the present project. Bargh and colleagues (1996) conducted a now-classic study in which priming elderly-relevant (*vs.* neutral) terms impacted participants' behaviour (i.e., they walked

slower thereafter). Similarly, other research has also found that activating constructs outside awareness can impact attitudes and behaviours (e.g., heat and aggression; DeWall & Bushman, 2009; money and helping; Vohs, Mead, & Goode, 2008; self-control and stereotype activation; Araya et al., 2002). Although subliminal priming has been widely used since the original experiment reported by Bargh and colleagues, some recent research has challenged both the legitimacy of the original findings as well as the potential for subliminal priming generally.

Doyen et al. (2012) conducted two studies attempting to replicate the effects found by Bargh et al. (1996). Whereas Bargh et al. had the experimenters' record participants' walking speed, Doyen et al. used infrared sensors for measurement. Doyen and colleagues did not find a significant difference of walking speed between participants primed with the category "old" (*vs.* no prime); that is, they were not able to replicate the effects found by Bargh et al. In their second study, Doyen et al. manipulated the experimenters' expectations; some experimenters were told participants would walk slower after being primed with the elderly, others were told participants would walk faster after the same prime. These two conditions were compared to the no-prime condition in terms of objective walking speed (measured by infrared sensors) and subjective walking speed (measured by the experimenters). The condition in which experimenters were not blind to the participants` condition, and the measurement was done manually, replicated the methodology used by Bargh et al. Interestingly, the original findings were replicated when experimenters were informed that participants would walk

slower (both through objective and subjective measurements). Also, experimenters who were told participants would walk faster had subjective measurements consistent with the information they were given. In addition, participants walked slower overall when experimenters were told they would be slow, relative to experimenters instructed they would be faster. Such research highlights the potentially significant impact of experimenter expectations on implicit manipulations and measures. In addition, it brings into question whether implicit priming techniques are optimal for improving intergroup relations.

Other researchers have also failed to replicate past studies which demonstrate behavioural effects of subliminal priming. For instance, Pashler and colleagues (2013) conducted three studies to examine the effects of subliminally priming honesty on disclosure of drinking-behaviour. It was expected that participants would be more honest when primed with honesty (*vs.* neutral terms) on measures regarding their drinking-behaviours, but no effects of the prime were found in any of the three studies, despite the use of large, diverse samples. Thus, the effects of subliminal priming on participants' behaviour in the original studies by Bargh et al. may have been due to demand characteristics and/or inaccurate measurement.

Based on their results, Doyen et al. (2012) challenged the previously-accepted notion that subliminal priming can have automatic effects on behaviour (that are not explainable by subtle cues given through the experimenter). In addition, Doyen et al. highlighted the importance of the subtle cues in the context on participants' reactions.

Similarly, Cesario, Plaks, Hagiwara, Navarrete, and Higgins (2010) demonstrated the importance of the context in behavioural responses to subliminal primes. Specifically, the behavioural response (i.e., fight or flight) to priming White participants with the social category "Blacks" was dependent on which behaviour was possible in the situation (i.e., enclosed booth or open field). Cesario, Plaks, and Higgins (2006) argue that priming a social category activates not only characteristics associated with that category, but also relevant interaction goals; for instance, if White participants' have prosocial goals associated with the target outgroup it may impact which of the potential responses they opt for. Moreover, the researchers draw attention to the limitation of possible responses to a social category prime in the ecology of lab experiments.

The effects of using incidental empathy primes in Study 2 also highlight the potential limitations of using a subliminal technique. Participants exposed to subliminal incidental (i.e., no category paired) empathy primes (*vs.* no prime) expressed more negative attitudes and demanded more group change from both marginalized groups (i.e., Muslims, women, the LGBT community) as well as Blacks. Contrary to past research successfully using explicit empathy techniques to improve attitudes and behaviours towards marginalized groups, Study 2 of the present project found that exposing participants to subliminal empathy primes had undesirable effects. Because the potential mediators considered did not explain the effects, the present project cannot isolate the process through which the effects occurred. However, if subliminal priming of a construct activates social goals (as suggested by Cesario et al., 2006), subliminal

exposure to a pro-ingroup emotion (de Waal, 2009) may have activated anti-outgroup behavioural responses (as was found for the outcome measures in Study 2).

In sum, if subliminal priming is as simple as past procedures suggest (Bargh et al., 1996), empathy should have had an "automatic" prosocial response based on past research demonstrating its benefits on intergroup relations (Finlay & Stephan, 2000). However, Study 2 did not find effects consistent with explicit techniques using empathy; in fact, the incidental empathy prime (*vs.* no prime) backfired. Together, the results of the present project, in combination with recent controversy regarding the presumably straightforward effects of subliminal priming, as well as research on the contextual dependency of such techniques, demonstrates the complexity of using subliminal priming, and highlights the need for additional research on such processes before the technique can be utilized in empathy-prejudice research.

Inconsistencies between Implicit and Explicit Outcomes

In addition to the unexpected effects found on the explicit measures, Study 2 also revealed inconsistencies between the implicit and explicit measures. Whereas numerous studies have demonstrated that implicit and explicit measures of prejudice are not strongly related (e.g., Fazio, Jackson, Dunton, & Williams, 1995), other research finds a positive relationship between implicit and self-reported attitudes (e.g., Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997; see also Nosek, 2007). It has been argued that attitudes regarding socially sensitive issues (e.g., racism, Islamophobia, etc.) are more likely to diverge between implicit and explicit measures, given participants'

motivations to appear egalitarian (Dovidio et al., 1997; Greenwald, McGhee, & Schwartz, 1998). Thus, a discrepancy between the effects of prejudice-reduction techniques on implicit attitudes versus explicit attitudes is possible.

In Study 2 of the present project, implicit attitudes were measured using the Black-White IAT. Given that the priming manipulation was implicit (i.e., outside participants' awareness), an implicit bias measure was considered in addition to the explicit measures. There was no significant difference between participants exposed to incidental (i.e., no category paired) empathy primes and those not primed, contrary to expectations. Interestingly, participants exposed to incidental (*vs.* integral) empathy primes expressed significantly less pro-White bias, contrary to expectations. This was inconsistent with the effects found on the explicit measures (which found more benefits to integral rather than incidental priming). Thus, exposure to incidental (*vs.* integral) empathy primes resulted in lower pro-White biases.

The effects on the implicit measure inform research using implicit techniques to reduce intergroup bias. Some past research has similarly found that implicit prejudice-reduction manipulations successfully impact implicit attitudes (Olson & Fazio, 2006). Given the preliminary evidence of the benefits of using empathy-relevant subliminal primes on explicit measures in Study 1, it is possible that additional research aimed at improving implicit empathy procedures may be able to have benefits for *both* implicit and explicit outcome measures. Further research on subliminal incidental and integral

empathy primes is needed to better understand the process and impact on intergroup relations.

Limitations

Due to the various inconsistencies between the two studies in the present project, it was difficult to determine the reason for the positive impact of priming empathy-relevant constructs in Study 1, relative to the "backfiring" effects of priming empathy in Study 2 (see Table 22 for a summary). Moreover, given the multitude of methodological differences, it was difficult to isolate the effects of each alteration from the first study to the second. Thus, it is not clear whether subliminally priming incidental empathy, relative to empathy-relevant constructs (i.e., the two Empathy^{+} conditions), "backfired" because of the changes in subliminal material or the target group. Thus, additional research is needed to consider the potential for using subliminal primes to reduce prejudice.

The present project considered the effects of using subliminal primes immediately after the priming task. For subliminal priming procedures to be useful in intergroup relations, it would be important to consider the long-term effects of such procedures. Perhaps, given the short life span of subliminal priming procedures, repeated exposure to subliminal primes, or the use of subliminal primes to supplement other intervention strategies, may be necessary. Moreover, future research is needed to consider the benefits of using subliminal procedures, relative to standard explicit techniques, given the success of explicit priming procedures, and the higher level of practicality in implementing explicit (*vs.* implicit) techniques.

Table 22

Differences in Subliminal Priming Methodology across Study 1 and 2

	Study 1	Study 2
Conditions	Control, Empathy^{+}, Empathy^{-}	Control, Empathy^{+}, Black-Empathy^{+}
Empathy^{+} Primes	Synonyms for/Aspects of Empathy (Not Empathy) (e.g., compassion, understanding, perspective)	Empathy, Sympathy
Target Group(s) for Prejudice	Immigrants	Blacks Marginalized Groups
Mediator(s) Explored	None	General Empathic Arousal Affective Empathy for Blacks Cognitive Empathy for Blacks Positive Mood Negative Mood
Moderator Explored	Disgust Sensitivity Intergroup Disgust Sensitivity Intergroup Anxiety Social Dominance Orientation Right-wing Authoritarianism	None

Caveat for Future Research and Conclusions

Given the resistance of prejudice-prone individuals to intervention strategies (McGregor, 1993), subliminal priming techniques have appeal and promise. However, Study 2 demonstrated that although empathy may be relevant and applicable to improving intergroup relations, subliminally priming constructs may inadvertently activate associated ingroup biases as well. Overall, the present set of studies has demonstrated that subliminal priming has both potential and dangers. Although participants exposed to empathy-relevant primes (*vs.* primes related to the opposite of empathy) in Study 1 became generally lower in prejudice and more helpful to

immigrants, priming incidental empathy itself in Study 2 produced undesirable effects for implicit and explicit prejudice as well as helping. In conclusion, further research is needed to explore and develop a subliminal empathy priming procedure which is beneficial for various outgroups.

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Appendix A

Brock University: Participants Informed Consent Statement

Project Title: Social attitudes, emotional reactions and word recognition.
Principal Investigator: Dr. Gordon Hodson, Brock University Professor ghodson@brocku.ca; 905-688-5550 ext. 5127; Co-Investigator: Beenish Khan, bk10kp@brocku.ca

- I understand that this study involves research, and that I am being invited to participate
- I understand that the purpose of this study is to examine personality, attitudes, and opinions regarding social attitudes, emotional reactions.
- I understand that the expected duration of my participation in this study is approximately 50 minutes.
- I understand the procedures to be followed, which include reading and signing two copies of this consent form; 1 of which I will keep for my own records. Once I have signed the consent form I will be asked to complete a questionnaire package. Afterwards the researcher will provide me with a debriefing form explaining the general study purpose.
- I understand that this study can count as research participation in a psychology course. As a participant I will also gain experience concerning how research in social psychology is conducted.
- All information provided is anonymous; my name will not be included or, in any other way, associated with the data collected in the study. Furthermore, because the interest is in the average responses of the entire group of participants, I will not be identified individually in any way in written reports of this research
- I understand that only the Principal Investigator (Dr. Hodson) and the research assistant(s) collecting the data will have access to my data, and that all information will be stored securely in password protected computer files. Given the intentions of publishing the results, data will be kept until approximately 5-7 years from date, after which all data will be destroyed.
- I understand that any other person participating in this study in the same session as I am holds the same right to privacy as I do. Therefore I will ensure that I do not reveal to anyone the identity of others present during this session.
- I understand that, because surveymonkey.com is located on an American server, it is subject to the Patriot Act. As such, any responses could be read by this third party.
- I understand that the results of this study may be published in professional journals and presented at conferences. Feedback about this study will be available approximately 6 months from date.
- I understand that there is a risk that I may experience mild emotional distress during the study.
- I understand that participation is voluntary; refusal to participate will involve no penalty or loss of benefits to which I am otherwise entitled and I may discontinue participation at any time; I understand that my data cannot be withdrawn after submission, but it remains anonymous. If I withdraw, I can still receive payment or course participation. Thus, I may withdraw at any point during the study, but once I have completed the study, my data cannot be withdrawn due its anonymous nature.
- I understand that some questions may make me feel uncomfortable and if I wish, I may decline to answer any questions or participate in any component of the study.

If you have any questions about this study or require further information, please contact the Principal Investigator using the contact information provided above. If you have any comments or concerns about your rights as a research participant, please contact the Research Ethics Office at (905) 688-5550 Ext. 3035, reb@brocku.ca.

This study has been reviewed and received ethics clearance through Brock University's Research Ethics Board (file # xx-xxx)

I _____ (please print)

1. Have read and understood the relevant information regarding this research project
2. Understand that I may ask questions in the future
3. Indicate free consent to research participation by signing this research consent form

Participant's Signature: _____ Date: _____

Researcher's Signature: _____ Date: _____

Below complete EITHER Form A or Form B (in recognition that you will receive payment OR course participation).

FORM A. I am participating in this experiment for $5. This experiment will not count toward research participation hours in a psychology course.

_____ _____

Signature of participant Signature of experimenter

FORM B. I am participating in this experiment for research participation in a psychology course and will not receive monetary payment for this experiment.

_____ _____ _____

Signature of participant course for participation Signature of experimenter

If you would like a copy of the results for this study (approximately 6 months from date) and/or would like to be informed of any publication of the results, please provide your email address below. _____

Please keep a copy of consent form for your own record

Appendix B
Demographics Questionnaire

Age: _____ years old

Sex (check one): □ Male □ Female

Sexual Orientation (check one):

□ Heterosexual □ Homosexual □ Bisexual □ Asexual □ Questioning

Ethnic Background (check any that apply):

□ White/Caucasian/European

□ Black/African-American

□ Asian

□ Aboriginal Peoples of Canada

□ Middle Eastern

□ Hispanic/Latino/South American

□ Other (please specify): _____

Please place a checkmark ("✓") beside any group that you consider yourself a member (if any)

___ENGLISH CANADIAN
___FRENCH CANADIAN
___IMMIGRANT
___ETHNIC MINORITY
___ HOMOSEXUAL
___JEW
___THE POOR
___FOREIGNER
___ABORIGINAL PEOPLES OF CANADA
___DRUG ADDICT
___MUSLIM
___AIDS PATIENT
___OBESE PERSON

Appendix C
Suspicion Questions

1. Can you guess the hypotheses of the study? (I.e., what do you think the study was about?)

2. Did anything about the study make you suspicions (yes or no)? If yes, please elaborate.

3. Did any of your friends/peers/classmates tell you anything about this study before you came to session? Please indicate with a yes or no. If yes, please elaborate.

4. Please add any additional comments you may have about the study here.

Appendix D

Brock University: Written Debriefing Form

Project Title: Social attitudes, emotional reactions and word recognition.
Principle Investigator: Dr. Gordon Hodson, Brock University, Professor ghodson@brocku.ca; 905-688-5550 ext.5127; Co-Investigator: Beenish Khan bk10kp@brocku.ca

The purpose of this research is to examine attitudes toward a variety of social groups, with a special focus on immigrant. Previous research suggests that these groups may be viewed negatively thus we are interested in factors that impact such attitudes. In the lexical task, certain words were flashed at a speed that could not be detected; the purpose of which was to examine how these words influenced reactions on subsequent tasks. Furthermore, we were interested in people's disgust sensitivity and whether this influenced person perception. We seek to understand whether certain emotions (e.g., disgust) contribute to attitudes and behaviours toward immigrant groups. We are also interested in how individual differences (e.g., authoritarianism) impact attitudes toward this groups.

It is important to remember that there is a range in beliefs and a variety of ways of viewing the world. For example, people have different political ideologies, or different religious beliefs. All viewpoints deserve consideration and respect. Further, people fall on a continuum with regard to their feelings about groups and there is a wide range of feelings people can have toward groups. Where you fall on this range does not necessarily make you a good or bad person.

Because anonymity is very important to this study, we ask that you please do **not** discuss any part of this study with your friends, peers, or classmates who are likely to take part in the study. The study will be compromised if you discuss its procedures with potential participants. In psychological research, it is often very important that participants are unaware of the procedures and hypotheses of a study before they participate in it. We hope you have learned something about psychological research processes by taking part in this study. However, if you wish to discuss the study with people who have already participated in the study, or people who never will participate (e.g., parents, friends who do not attend Brock), that is acceptable.

If any part of the study has made you feel especially uncomfortable and you wish to seek help in dealing with your feelings, please note that the Student Development Center at Brock offers personal counseling services to students free of charge for any personal/ social concerns or difficulties students may have. To make an appointment with a counselor, phone 905-684-6891. If you feel stressed for any reason following this study, please take advantage of the following useful websites:
http://www.stresslesscountry.com/
http://www.webmd.com/balance/stress-management/default.htm

If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact the Research Ethics Officer at Brock University at 905-688-5550, extension 3035. This project has been reviewed and received ethics clearance through the Office of Research Ethics Board, Brock University (File # XX-XXX).

Thank you for your time and support in participating in this study!
Dr. Hodson
If you have any questions or concerns please feel free to contact any of the researchers (see above).

Appendix E
Disgust Sensitivity Scale

Please indicate how much you agree with each of the following statements, or how true it is about you. Please write a number (1, 2, 3 or 4) to indicate your answer: 1 = Strongly disagree (very untrue about me), **2** = Mildly disagree (somewhat untrue about me), **3** = Mildly agree (somewhat true about me), **4** = Strongly agree (very true about me).

_____1. I might be willing to try eating monkey meat, under some circumstances
_____2. It would bother me to see a rat run across my path in a park
_____3. Seeing a cockroach in someone else's house does not bother me
_____4. It bothers me to hear someone clear a throat full of mucus
_____5. If I see someone vomit, it makes me sick to my stomach
_____6. It would bother me to be in a science class, and see a human hand preserved in a jar
_____7. It would not upset me at all to watch a person with a glass eye take the eye out of the socket
_____8. It would bother me tremendously to touch a dead body
_____9. I would go out of my way to avoid walking through a graveyard
_____10. I never let any part of my body touch the toilet seat in a public washroom
_____11. I probably would not go to my favorite restaurant if I found out that the cook had a cold
_____12. Even if I was hungry, I would not drink a bowl of my favorite soup it if had been stirred with a used but thoroughly washed flyswatter
_____13. It would bother me to sleep in a nice hotel room if I knew that a man had died of a heart attack in that room the night before

How disgusting would you find each of the following experiences? Please write a number (1, 2, 3, or 4) to indicate your answer: 1 = Not disgusting at all, **2** = Slightly disgusting, **3** = Moderately disgusting, **4** = Very disgusting. If you think something is bad or unpleasant, but not disgusting, you should write "**1**".

_____14. If you see someone put ketchup on vanilla ice cream and eat it
_____15. You are about to drink a glass of milk when you smell that it is spoiled
_____16. You see maggots on a piece of meat in an outdoor garbage pail
_____17. You are walking barefoot on concrete and step on an earthworm
_____18. While you are walking through a tunnel under a railroad track, you smell urine
_____19. You see a man with his intestines exposed after an accident
_____20. Your friend's pet cat dies and you have to pick up the dead body with your bare hands
_____21. You accidentally touch the ashes of a person who has been cremated
_____22. You take a sip of soda and realize that you drank from the glass that an acquaintance of yours
_____had been drinking from
_____23. You discover that a friend of your changes underwear only once a week
_____24. A friend offers you a piece of chocolate shaped like dog-doo
_____25. As part of a sex education class, you are required to inflate a new lubricated condom, using your mouth.

Appendix F
Intergroup Disgust Scale

Please circle your response, using the scale below.

1	2	3	4	5	6	7
Strongly Disagree	**Moderately Disagree**	**Slightly Disagree**	**Neither Disagree Nor Agree**	**Slightly Agree**	**Moderately Agree**	**Strongly Agree**

1. I would ask for hotel bed sheets to be changed if the previous occupant belonged to another social group.
   1 2 3 4 5 6 7

2. I feel disgusted when people from other ethnic groups invade my personal space.
   1 2 3 4 5 6 7

3. When socializing with members of a stigmatized group, one can easily become tainted by their stigma.
   1 2 3 4 5 6 7

4. After shaking hands with someone from another ethnic group, even if their hands were clean, I would want to wash my hands.
   1 2 3 4 5 6 7

5. After interacting with another ethnic group, I typically desire more contact with my own ethnic group to "undo" any ill effects from intergroup contact.
   1 2 3 4 5 6 7

6. I would not feel disgusted if I ate food prepared by another ethnic group with their hands
   1 2 3 4 5 6 7

7. It would be repulsive to swim in a chlorinated swimming pool if most of the people in the pool belonged to another ethnic group.
   1 2 3 4 5 6 7

8. It would not bother me to have an intimate sexual relationship with someone from another racial group.
   1 2 3 4 5 6 7

Appendix G
Intergroup Anxiety Measure

1. If you were the only member of your racial or ethnic group and you were interacting with a group of immigrants (e.g., talking with them, working on a project with them), how would you feel compared to occasions when you were interacting with people from your own social group?

When working with immigrants, I would feel:

		Not at all						**Extremely**
		-3	**-2**	**-1**	**0**	**+1**	**+2**	**+3**
a)	I would feel awkward	-3	-2	-1	0	+1	+2	+3
b)	I would feel self-conscious	-3	-2	-1	0	+1	+2	+3
c)	I would feel happy	-3	-2	-1	0	+1	+2	+3
d)	I would feel accepted	-3	-2	-1	0	+1	+2	+3
e)	I would feel confident	-3	-2	-1	0	+1	+2	+3
f)	I would feel irritated	-3	-2	-1	0	+1	+2	+3
g)	I would feel impatient	-3	-2	-1	0	+1	+2	+3
h)	I would feel defensive	-3	-2	-1	0	+1	+2	+3
i)	I would feel suspicious	-3	-2	-1	0	+1	+2	+3
j)	I would feel careful	-3	-2	-1	0	+1	+2	+3

Appendix H
Social Dominance Orientation Measure

Below are a series of statements with which you may either agree or disagree. For each statement, please indicate the degree of your agreement or disagreement by selecting a number from **1** (*Do Not Agree at All*) to **7** (*Strongly Agree*). Please remember that there are no right or wrong answers, and that your first responses are usually the most accurate.

1. Some groups of people are just more worthy than others.
2. We should do what we can to equalize conditions for different groups.
3. In getting what your group wants, it is sometimes necessary to use force against other groups.
4. If certain groups of people stayed in their place, we would have fewer problems.
5. We would have fewer problems if we treated different groups more equally.
6. To get ahead in life, it is sometimes necessary to step on other groups.
7. No one group should dominate in society.
8. Group equality should be our ideal.
9. All groups should be given an equal chance in life.
10. We must increase social equality.
11. Superior groups should dominate inferior groups.
12. It's probably a good thing that certain groups are at the top and other groups are at the bottom.
13. We must strive to make incomes more equal.
14. Sometimes other groups must be kept in their place.
15. It would be good if all groups could be equal.
16. Inferior groups should stay in their place.

Appendix I
Right-wing Authoritarianism Measure

Please circle your response, using the scale below.

1	2	3	4	5	6	7
Strongly Disagree	**Moderately Disagree**	**Slightly Disagree**	**Neither Disagree Nor Agree**	**Slightly Agree**	**Moderately Agree**	**Strongly Agree**

1. Gays and lesbians are just as healthy and moral as anybody else.
1 2 3 4 5 6 7

2. Atheists and others who have rebelled against the established religions are no doubt every bit as good and virtuous as those who attend church regularly.
1 2 3 4 5 6 7

3. There are many radical, immoral people in our country today who are trying to ruin it for their godless purposes, whom the authorities should put out of action.
1 2 3 4 5 6 7

4. Our country will be destroyed someday if we do not smash the perversions eating away our and traditional beliefs.
1 2 3 4 5 6 7

5. The situation in our country is getting so serious, the strongest methods would be justified if they eliminated the troublemakers and got us back to our true path.
1 2 3 4 5 6 7

6. Everyone should have their own lifestyle, religious beliefs, and sexual preferences, even if it makes them different from everyone else.
1 2 3 4 5 6 7

7. People should pay less attention to the Bible and the other old traditional forms of religious guidance, and instead develop their own personal standards of what is moral and immoral.
1 2 3 4 5 6 7

8. The only way our country can get through the crisis ahead is to get back to our traditional values,
put some tough leaders in power, and silence the troublemakers spreading bad ideas.
1 2 3 4 5 6 7

9. There is nothing wrong with premarital sexual intercourse.
1 2 3 4 5 6 7

10. What our country *really* needs, instead of more "civil rights" is a good, stiff dose of law and order.

1 2 3 4 5 6 7

11. Some of the best people in our country are those who are challenging our government, criticizing religion, and ignoring the "normal way" things are supposed to be done.

1 2 3 4 5 6 7

12. The facts on crime, sexual immorality, and the recent public disorders all show that we have to crack down harder on deviant groups and trouble-makers if we are going to save our moral standards and preserve law and order.

1 2 3 4 5 6 7

Appendix J
Lexical Decision Task

Stimuli classified as "words" in task:

string	rain	cup	price	hotel
tar	song	stir	slope	come
gift	boot	play	dupe	lobster
cake	call	paid	desk	fabric
limp	shoe	eat	blue	large
cape	flow	sold	beach	thick
fly	rope	snow	cream	blink
sail	moon	pie	air	open
tape	oak	fill	ship	sauce

Stimuli classified as "nonwords" in task:

ghreests	volms	sneuch	blulcs	flane
phlurnts	scincs	cwyfths	traw*vs*	plail
knurdge	sherle	urbe	tempced	brigh*vs*
phreuze	ghlomn	grourn	brepth	gyte
kugns	rhinde	clett	teene	dourck
kneulls	cauv	phlynsed	flurld	skoal
fribbs	grurmb	dweigues	wrintse	micked
hoossed	smyncs	soys	creussed	koiste
skraulds	knirnde	phleused	swylch	klerth

Empathy^{+} words:	Empathy^{-} words:
sympathy	detachment
compassion	coldness
perspective	disregard
understanding	indifference
consideration	insensitivity
warmth	disinterest
comprehension	passive
insight	unconcern

Appendix K
Modern Racism Scale for Immigrants

Please indicate your responses to the following questions by circling your response.

1	2	3	4	5
Strongly Disagree	**Slightly Disagree**	**Neither Disagree Nor Agree**	**Slightly Agree**	**Strongly Agree**

- -

1. Over the past few years, the government and news media have shown more respect for immigrants than they deserve.

0 1 2 3 4

2. It is easy to understand the anger of immigrants in Canada.

0 1 2 3 4

3. Discrimination against immigrants is no longer a problem in Canada.

0 1 2 3 4

4. Over the past few years, immigrants have gotten more economically than they deserve.

0 1 2 3 4

5. Immigrants have more influence on government policies than they ought to have.

0 1 2 3 4

6. Immigrants are getting too demanding in their push for equal rights.

0 1 2 3 4

7. Immigrants should not push themselves where they are not wanted.

0 1 2 3 4

Appendix L
Intergroup Helping Orientation Measure for Immigrants

Below you will find statements about potential problems immigrants may encounter in Canada. Please write a number that reflects your agreement or disagreement on the line beside each statement according to the scale below. Please give your immediate response.

-3	-2	-1	0	+1	+2	+3
Strongly Disagree						**Strongly Agree**

---

1. The government should provide funding for immigrants to ease any settlement problems they may encounter.
2. The government should provide job training for immigrants to compensate for their lack of opportunity.
3. Settlement problems aren't really an issue. If immigrants dealt with their personal problems they would find that other problems would go away.
4. Preferential treatment should be given to immigrants to help them settle in Canada.
5. Immigrants simply need to be more motivated to solve any settlement problems.
6. Immigrants should change their way of life if they want any settlement problems to be solved.
7. Employers should be required to hire a representative proportion of immigrants.
8. It should be made easier for immigrants to find solutions to their settlement problems.
9. Canadians should help solve the problems for immigrants.
10. Canadians should help immigrants overcome the limitations imposed on them by society.
11. The solution to any settlement problems faced by immigrants is for them to follow proper moral guidelines.
12. Immigrants should rely upon the government to solve any settlement problems.
13. Canadians should go out of their way to help immigrants.
14. The solution to any settlement problems faced by immigrants is for them to follow the guidelines provided by Western religions.
15. Government help is not the solution to settlement problems for immigrants. The answer is for immigrants to display determination to solve their own settlement problems.
16. The government should not give preferential treatment to immigrants.
17. The solutions and opportunities are there; immigrants just have to be willing to work hard for them.
18. Canadians should help immigrants help themselves.
19. Immigrants should follow the advice of our religions authorities in order to solve their settlement problems the proper way.
20. Canadians should help immigrants to overcome any barriers they face.
21. Experts are needed to solve the settlement problems faced by immigrants.
22. Immigrants need the co-operation of Canadians to compensate for the obstacles imposed upon them.

Appendix M
Resource Allocation Measure

Some universities donate a portion of student fees to aid student clubs. If such a policy were to be implemented at Brock, such donations would be distributed to various clubs at the university.

Consider a scenario in which Brock collected $60,000 from student fees, and that this money was set aside to fund clubs. Please read the club descriptions below, and indicate the dollar amount that you would choose to donate to each club. Remember, there is only $60,000, so your total donation cannot exceed that amount.

Clubs:

$_____ Brock Pride (a social and support group for gay, lesbian, bisexual, and transgendered students)

$_____ Brock Outdoors Club (a club dedicated to getting Brock students active outdoors)

$_____ Brock Immigrant Student Association (a club providing support and social opportunities for immigrant students)

$_____ United Gamers of Brock (a fun and comfortable social environment to experience and talk about video gaming)

$_____ Brock University Creative Writers Club (aims to forge a community among those interested in creative writing)

$ 60,000 Total (your $ amounts above cannot exceed this total).

Appendix N
Lexical Decision Task

Stimuli classified as "words" in the task:

string	sail	flow	paid	slope
tar	tape	rope	eat	dupe
gift	rain	moon	sold	desk
cake	song	oak	snow	blue
limp	boot	cup	pie	beach
cape	call	stir	fill	
fly	shoe	play	price	

Stimuli classified as "non-words" in the task:

ghreests	hoossed	cauv	groum	trawvs
phlumts	skraulds	grurmb	clett	tempced
knurdge	volms	smyncs	phlynsed	brepth
phreuze	scincs	knimde	dweigues	teene
kugns	sherle	sneuch	soys	flurld
kneulls	ghlomn	cwyfths	phleused	
fribbs	rhinde	urbe	blulcs	

Empathy^{+} and Black-Empathy^{+} empathy prime words: empathy, sympathy

Black-Empathy^{+} social category primes: Blacks, Africans

Appendix O
Interpersonal Reactivity Index

The following statements inquire about your thoughts and feelings in a variety of situations. For each item, indicate how well it describes you by choosing the appropriate number on the scale at the top of the page: 1, 2, 3, 4, or 5. When you have decided on your answer, fill in the letter on the answer sheet next to the item number. READ EACH ITEM CAREFULLY BEFORE RESPONDING. Answer as honestly as you can. Thank you.

ANSWER SCALE:

1	2	3	4	5
DOES NOT DESCRIBE ME WELL			DESCRIBES ME VERY WELL	

1. I often have tender, concerned feelings for people less fortunate than me.
2. I sometimes find it difficult to see things from the "other guy's" point of view.
3. Sometimes I don't feel very sorry for other people when they are having problems.
4. In emergency situations, I feel apprehensive and ill-at-ease.
5. I try to look at everybody's side of a disagreement before I make a decision.
6. When I see someone being taken advantage of, I feel kind of protective towards them.
7. I sometimes feel helpless when I am in the middle of a very emotional situation.
8. I sometimes try to understand my friends better by imagining how things look from their perspective.
9. When I see someone get hurt, I tend to remain calm.
10. Other people's misfortunes do not usually disturb me a great deal.
11. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments.
12. Being in a tense emotional situation scares me.
13. When I see someone being treated unfairly, I sometimes don't feel very much pity for them.
14. I am usually pretty effective in dealing with emergencies.
15. I am often quite touched by things that I see happen.
16. I believe that there are two sides to every question and try to look at them both.
17. I would describe myself as a pretty soft-hearted person.
18. I tend to lose control during emergencies.
19. When I'm upset at someone, I usually try to "put myself in his shoes" for a while.
20. When I see someone who badly needs help in an emergency, I go to pieces.
21. Before criticizing somebody, I try to imagine how I would feel if I were in their place.

Appendix P
Batson Empathy Scale

Please give your answer by circling the number most appropriate on the seven point scale (1 = *not at all*, to 7 = *very much*).

1. Please indicate the extent to which you feel sympathetic towards Black people.

1	2	3	4	5	6	7
Not at all						**Very**

2. Please indicate the extent to which you feel compassionate towards Black people.

1	2	3	4	5	6	7
Not at all						**Very**

3. Please indicate the extent to which you feel softhearted towards Black people.

1	2	3	4	5	6	7
Not at all						**Very**

4. Please indicate the extent to which you feel warm towards Black people.

1	2	3	4	5	6	7
Not at all						**Very**

5. Please indicate the extent to which you feel tender towards Black people.

1	2	3	4	5	6	7
Not at all						**Very**

6. Please indicate the extent to which you feel moved by Black people.

1	2	3	4	5	6	7
Not at all						**Very**

Appendix Q
Intergroup Perspective Taking Scale

Please answer the following questions by circling your response on the rating scale. If you do not want to respond to the items, either because you are not heterosexual or for some other reason, please move on to the next page without answering these questions.

1 Strongly Disagree	2 Moderately Disagree	3 Slightly Disagree	4 Neither Disagree/Agree	5 Slightly Agree	6 Moderately Agree	7 Strongly Agree

1. I can mentally "put myself in the shoes" of a Black person.
1 2 3 4 5 6 7

2. I can view the world as most Blacks view the world.
1 2 3 4 5 6 7

3. Before judging a Black person, I rarely imagine myself in their position.
1 2 3 4 5 6 7

4. I can easily imagine a day in the life of a Black person.
1 2 3 4 5 6 7

5. I could never see the world as Blacks see the world.
1 2 3 4 5 6 7

Appendix R
Brief Mood Introspection Scale

Circle the response on the scale below that indicates how well each adjective or phrase describes your present mood.

LIVELY

1	2	3	4	5	6	7
(definitely do not feel)						(definitely feel)

DROWSY

1	2	3	4	5	6	7
(definitely do not feel)						(definitely feel)

HAPPY

1	2	3	4	5	6	7
(definitely do not feel)						(definitely feel)

GROUCHY

1	2	3	4	5	6	7
(definitely do not feel)						(definitely feel)

SAD

1	2	3	4	5	6	7
(definitely do not feel)						(definitely feel)

PEPPY

1	2	3	4	5	6	7
(definitely do not feel)						(definitely feel)

TIRED

1	2	3	4	5	6	7
(definitely do not feel)						(definitely feel)

NERVOUS

1	2	3	4	5	6	7
(definitely do not feel)						(definitely feel)

CARING

1	2	3	4	5	6	7
(definitely do not feel)						(definitely feel)

CALM

1	2	3	4	5	6	7
(definitely do not feel)						(definitely feel)

CONTENT

1	2	3	4	5	6	7
(definitely do not feel)						(definitely feel)

LOVING

1	2	3	4	5	6	7
(definitely do not feel)						(definitely feel)

GLOOMY

1	2	3	4	5	6	7
(definitely do not feel)						(definitely feel)

FED UP

1	2	3	4	5	6	7
(definitely do not feel)						(definitely feel)

JITTERY

1	2	3	4	5	6	7
(definitely do not feel)						(definitely feel)

ACTIVE

1	2	3	4	5	6	7
(definitely do not feel)						(definitely feel)

Appendix S
General Modern Racism Scales

Please indicate your responses to the following questions by circling your response.

1	2	3	4	5
Strongly Disagree	**Slightly Disagree**	**Neither Disagree Nor Agree**	**Slightly Agree**	**Strongly Agree**

Over the past few years, the government and news media have shown more respect for Muslims than they deserve.

0 1 2 3 4

It is easy to understand the anger of gays/lesbians in Canada.

0 1 2 3 4

Sexism is no longer a problem in Canada.

0 1 2 3 4

Over the past few years, women have gotten more economically than they deserve.

0 1 2 3 4

Gays/lesbians have more influence on government policies than they ought to have.

0 1 2 3 4

Women are getting too demanding in their push for equal rights.

0 1 2 3 4

Muslims should not push themselves where they are not wanted.

0 1 2 3 4

Appendix T
Modern Racism Scale for Blacks

Please indicate your responses to the following questions by circling your response.

1	2	3	4	5
Strongly Disagree	**Slightly Disagree**	**Neither Disagree Nor Agree**	**Slightly Agree**	**Strongly Agree**

- -

Over the past few years, the government and news media have shown more respect for Blacks than they deserve.

0 1 2 3 4

It is easy to understand the anger of Blacks in Canada.

0 1 2 3 4

Discrimination against Blacks is no longer a problem in Canada.

0 1 2 3 4

Over the past few years, Blacks have gotten more economically than they deserve.

0 1 2 3 4

Blacks have more influence on government policies than they ought to have.

0 1 2 3 4

Blacks are getting too demanding in their push for equal rights.

0 1 2 3 4

Blacks should not push themselves where they are not wanted.

0 1 2 3 4

Appendix U
General Intergroup Helping Orientation Measure

Below you will find statements about potential problems immigrants may encounter in Canada. Please write a number that reflects your agreement or disagreement on the line beside each statement according to the scale below. Please give your immediate response.

-3	-2	-1	0	+1	+2	+3
Strongly Disagree						**Strongly Agree**

---

1. The government should provide financial aid for women to ease any social disadvantages they may face.
2. The government should provide job training for women to compensate for their lack of opportunity.
3. Sexism isn't really an issue. If women people dealt with their personal problems they would find that other problems would go away.
4. Preferential treatment should be given to Muslims to help them cope with discrimination in Canada.
5. Gays and lesbians simply need to be more motivated to solve any social problems.
6. Muslims should change their way of life if they want their problems to be solved.
7. Employers should be required to hire a representative proportion of gays and lesbians.
8. It should be made easier for Muslims to find support when facing discrimination.
9. Canadians should help solve the problems for gays and lesbians.
10. Canadians should help women overcome the limitations imposed on them by society.
11. The solution to any problems faced by gays and lesbians is for them to follow proper moral guidelines.
12. Muslims should rely upon the government to cope with discrimination.
13. Canadians should go out of their way to help women.
14. The solution to a sexism faced by women is for them to follow the guidelines provided by society.
15. Government help is not the solution to social problems for Muslims. The answer is for Muslims to display determination to solve their own problems.
16. The government should not give preferential treatment to gays and lesbians.
17. The solutions and opportunities are there; women just have to be willing to work hard for them.
18. Canadians should help gays and lesbians to help themselves.
19. Muslims should follow the advice of majority groups in order to solve their settlement problems the proper way.
20. Canadians should help Muslims to overcome any barriers they face.
21. Experts are needed to solve the settlement problems faced by Muslims.
22. Gays and lesbians need the co-operation of Canadians to compensate for the obstacles imposed upon them.

Appendix V
Black ITG-HO Measure

Below you will find statements about potential problems immigrants may encounter in Canada. Please write a number that reflects your agreement or disagreement on the line beside each statement according to the scale below. Please give your immediate response.

-3	-2	-1	0	+1	+2	+3
Strongly Disagree						**Strongly Agree**

---

1. The government should provide financial aid for Black people to ease any social disadvantages they may face.
2. The government should provide job training for Black people to compensate for their lack of opportunity.
3. Racism isn't really an issue. If Black people dealt with their personal problems they would find that other problems would go away.
4. Preferential treatment should be given to Black people to help them cope with discrimination in Canada. .
5. Black people simply need to be more motivated to solve any social problems.
6. Black people should change their way of life if they want race-based problems to be solved.
7. Employers should be required to hire a representative proportion of Black people.
8. It should be made easier for Black people to find support when facing racial discrimination.
9. Canadians should help solve the problems for Black people.
10. Canadians should help Black people overcome the limitations imposed on them by society.
11. The solution to any problems faced by Black people is for them to follow proper moral guidelines.
12. Black people should rely upon the government to cope with discrimination.
13. Canadians should go out of their way to help Black people.
14. The solution to a racism faced by Black people is for them to follow the guidelines provided by society.
15. Government help is not the solution to social problems for Black people. The answer is for Black people to display determination to solve their own problems.
16. The government should not give preferential treatment to Black people.
17. The solutions and opportunities are there; Black people just have to be willing to work hard for them.
18. Canadians should help Black people to help themselves.
19. Black people should follow the advice of majority groups in order to solve their settlement problems the proper way.
20. Canadians should help Black people to overcome any barriers they face.
21. Experts are needed to solve the settlement problems faced by Black people.
22. Black people need the co-operation of Canadians to compensate for the obstacles imposed upon them.

Appendix W
Black-White Implicit Association Test

The IAT is a reaction-time based task which will be administered on the computers using Medialab. A sample Black-White (Race) IAT very similar to the one being used in this study can be online found at: https://implicit.harvard.edu/implicit/canada/selectatest.jsp.

The Black-White Implicit Association Test will pair Black and White faces with positive and negative words. The IAT compares reaction times in response to congruent items (e.g., White-positive; Black-negative) with incongruent items (e.g., Black-positive; White-negative).There will be 6 Black faces, 6 White faces, 8 positive words, and 8 negative words (see below).

Black:

White:

The positive words will be: Joy, Love, Peace, Wonderful, Pleasure, Glorious, Laughter, Happy. The negative word will be: Agony, Terrible, Horrible, Nasty, Evil, Awful, Failure, Hurt.

On the computer screen, the test will look something like this:

Black **White**

OR **OR**

Good **Bad**

X

In the center where the "X" is located, a word or a face will appear. Participants will have to rapidly decide whether the item (face or word) fits into the categories on the left, or categories on the right.

For example:

Black **White**

OR **OR**

Good **Bad**

JOY

Here, participants would correctly decide that the word "joy" is good, and choose the left side.

Black **White**

OR **OR**

Good **Bad**

Here, participants would correctly decide this face is White, and choose the right side.

Pairs will be reversed over trials such that Black and good will be paired, Black and bad will be paired, White and good will be paired, White and bad will be paired, and each set of pairings will reverse sides as well.